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## ORIGINAL ARTICLES.

### NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.—PRESIDENT'S ADDRESS.


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I CANNOT find words suitably to express my appreciation of the great honor you have done me in electing me as President of this Association. While struggling for so many years alone and in a remote region with the tuberculosis problem about me, my wildest fancy never pictured the possibility of such a widespread and earnest movement as this, and much less that I would ever be accorded the inestimable privilege of standing before such a gathering as I see here to-day as its leader. That I have been permitted to do so will be to me a satisfaction which will last as long as life does.

This, the first regular meeting of the National Association for the Study and Prevention of Tuberculosis, marks an epoch in the history of the struggle against this disease in America. It means that through knowledge has come responsibility and hope, and through both, action. The "Great White Plague" has ever been so gigantic and hopeless a problem that until recent years men have accepted the holocaust of human life which it has ever claimed, and the terrible suffering it entails on humanity, as an inevitable decree of fate, and have either looked on with oriental fatalism or turned their heads and passed by on the other side with a hopelessness born of despair and of ignorance as to the etiology of the disease.

For many years the pathologist labored faithfully and unremittingly, but unsuccessfully, to solve the problem of tuberculosis; but by the application of the experimental method, and with the birth of the new science of bacteriology, Vielmin, Koch, Cornet and others, threw a light on the etiology of tuberculosis which, little by little, has inspired men with new hope and led them to the conviction that since tuberculosis is a communicable disease and its etiological factor has been discovered, it is also to a great extent a preventable one.

The realization of this truth, so vital to mankind, has come but slowly, and for the past twenty years workers in this field have struggled long and patiently to demonstrate the validity of this new hope, and to accumulate indubitable evidence as to the practical efficacy of preventive measures, while others, by improved methods of diagnosis and treatment, have demonstrated the possibility of a much earlier detection of the disease and its curability when treated by the open-air method.

I congratulate those of you who have so many years been engaged in this arduous task that your labors have not been in vain, and that at last tuberculosis is recognized generally as communicable, preventable, and, in its earlier stages and more favorable types, curable.

To this demonstration the National Association for the Study and Prevention of Tuberculosis owes its existence, and its moving force today is the hopefulness based on facts garnered in this field by individual workers during the past twenty years. This newly gained knowledge needs but to be applied in order to insure success, and it has long been evident that the efforts of individual workers can be of little avail in meeting so vast a problem—one which ten years ago would have been thought beyond the power of man—namely, the reduction of the death-rate from tuberculosis over all the United States of America. To accomplish this the National Association should be something more than a medical society devoted to the study of tuberculosis. Its watchwords should be, Organization and Cooperation; an organization so perfect and a cooperation so broad that, through education, it will bind together for the attainment of a common aim the laity, the profession, the State, and the Nation.

Abroad the value of organization and cooperation has already been recognized, and the modern crusade against tuberculosis finds European nations not as units each following its own independent path, but banded together in an International Association, with a Central Bureau in Berlin, issuing its monthly publications in three languages, and bringing together at its meetings, held at stated intervals, the best minds of medical and related professions of all countries for deliberation and consultation.

Tardily though it be, with us a beginning has been made. The United States is no longer without representation among the nations in their combined struggle with the Great White Plague, and this Association is now part of that vast international movement to stamp out tuberculosis which has been steadily spreading over the world. Organization and cooperation are the keynotes of the age, and the two main factors on which the success of the vast undertakings of modern times has depended. On their thorough application and broadest interpretation depends the degree of success the National Association will achieve. The first problem before it is to combine and direct the scattered efforts of individual workers and existing associations, and to extend and expand the field of these ef-

forts. The precise lines along which this great Society will develop its work rests with you and the future.

One of the first steps to be initiated would seem the adoption of a plan of organization that would bring each State, by means of one or more representatives, lay and professional, in touch with the National Association. To these representatives would be delegated the carrying out of the antituberculosis crusade in their respective States along the lines recommended by the National Association, making at the annual meeting their report of the progress accomplished. Through a publication of its own the National Association should keep its members in touch with one another's work and methods, and with any advances made in meeting the sociological problems which stand in so important a relation to tuberculosis, as well as in perfecting its municipal control and advancing its study and methods of treatment.

The first and greatest need is education. Education of the people, and through them education of the State. It is evident that if every man and woman in the United States were familiar with the main facts relating to the manner in which tuberculosis is communicated and the simple measures necessary for their protection, not only we might reasonably expect as a direct result of this knowledge a great diminution in the death-rate of the disease, but the people would soon demand and easily obtain effective legislation for its prevention and control.

When a State has once become well educated, and not before, will the other requisites necessary to the control of the disease be forthcoming. These requisites are briefly, a higher standard of public hygiene and improved conditions of life for the masses; sanitary laws embodying the municipal control of tuberculosis as it is now understood; the segregation of the tuberculous in public institutions and prisons; the establishment of sanatoriums for incipient cases; hospitals for advanced and hopeless ones who cannot be cared for safely at their homes; specially organized dispensaries, laboratories for research, etc.

Education should begin by teaching in the public schools the main facts relating to the transmission of tuberculosis, insisting in such teachings on the value of hygienic measures of prevention, and dwelling as little as possible on the details of the bacteriology of the disease, which would tend to produce in imaginative young minds exaggerated and fantastic impressions of the dangers of infection; education of the masses by distribution of suitable literature, by lectures to trades unions and various organized bodies, by free museums, tuberculosis exhibitions, and through the medium of the public press and periodical literature. Education, by teaching just where the danger lies and the simple measures necessary to avoid it will tend to quiet and control the unreasoning and ignorant terror of infection which often works such hardship and injustice to the consumptive. Early detection of the disease is the first requisite for success in its treatment, and it is through education alone that incipient cases will be induced to seek advice early and to make at the right time the sacrifices necessary to bring about their recovery.

Education will help to crush the vampire of quackery which preys ever on the misfortunes and ignorance of the poor consumptive, appealing with devilish ingenuity, through spacious advertisements of mysterious specifics and sure cures, to his credulity and hope, masquerading under the guise of science and even of philanthropy, in order to wring from him his small savings, and then casting him off, when these have been exhausted and his disease is well advanced, doomed to a lingering death, helpless, hopeless, and a heavy burden on the overtaxed resources of a charitable community. May the time soon come when the National Association will be in a position to put its heel on the demon of quackery, not only by educating its victims, but by applying its large resources and influence to bring the offenders to justice.

Educational measures should not be confined to the public, but, along different lines, extended to the profession as well. Medical schools should be urged to give special didactic and clinical instruction in advanced methods of making an early diagnosis. In graduating from most medical schools the young practitioner is too apt to carry with him the picture of tuberculosis as he has seen it in the advanced cases usually shown at clinics and dispensaries. Incipient tuberculosis he has not been taught to recognize. On the general practitioner and the dispensary physician rests the great responsibility of detecting the disease in its incipiency, for it is to them and not to the specialist that the patient first applies. Not by lectures alone, but by clinical instruction as well, should medical students be taught how to detect the varied and insidious onset of incipient tuberculosis, impressing on them the curability of the disease in its earlier stages, and for this reason the responsibility of making a diagnosis before the classical symptoms of pulmonary consumption develop. The various sanatoriums offer such rich opportunities for clinical instruction in incipient tuberculosis, early diagnosis, and treatment, that summer courses could, with great advantage, be given at these institutions.

The value of the tuberculin test when applied to cases where a positive diagnosis cannot be made by ordinary methods has not yet been fully recognized, and in my experience its unreliability and dangers have been much exaggerated. A method which enables the physician to reach a positive conclusion as to the presence or absence of tuberculosis long before it can be done by ordinary clinical methods is of such vital importance in all attempts at curing the disease that it is to be hoped the National Association will be a me-

dium through which a more exact knowledge of its scope, its limitations, and its real value, may be reached.

The practical application of knowledge already gained as to the measures briefly touched upon, and which represent prevention, is one of the two great responsibilities of the National Association. The other is the extension and advancement of the study of tuberculosis in this country. The United States, at any rate so far as tuberculosis is concerned, should not much longer justly lie under the imputation of being "one of the largest borrowers in the scientific markets of the world." Already everything points to an awakening to the need and possibilities of original research in this country. Within the past five years the Carnegie Institute, the Rockefeller Institute, and the Phipps Institute, have been founded and generously endowed. Many laboratories have been opened in connection with colleges and hospitals, and journals and societies devoted to original research have sprung into life, so that before many years American Science will have won its place in the world's scientific advances in the field of medical research. The scientific study of tuberculosis, however, offers so broad a field, and one requiring observations extending over such long periods of time, that special permanent endowments solely for researches in tuberculosis, which would enable experimentation in this field to be carried on continuously through a number of years, are greatly needed.

In time the sanatoria can furnish, from carefully kept records extending over many years, valuable data hitherto unattainable, bearing on the history, varied clinical manifestations and treatment of the disease, and improvement in methods of municipal control will steadily develop along the lines already so wisely instituted.

But it is mainly to the laboratory research work that we must look for the solution of many of the as yet unsolved problems of tuberculosis, and for advance in our methods of prevention and treatment. The study of different sources of infection; of the great variations of virulence in tubercle bacilli and how brought about; of the different species of the tubercle bacilius and of related bacteria; their relation to each other and to the disease; the chemistry of their toxins; and, above all, the mechanism of natural immunity and the possibility of producing artificial immunity to the germ and to its toxins; the mechanism of such an artificially induced resistance, are but a few of the subjects of the utmost interest at present, on which the laboratory alone can throw much needed light.

Although artificial immunization against tuberculosis has hitherto been looked upon as a dream never likely to be realized, during the past ten years a great deal has been added to our knowledge of the mechanism of natural and acquired immunity against infectious diseases, and appreciable advances have been made in producing in animals a relative degree of artificial immunity against tuberculosis. If further researches are ever to result in some safe method of inoculation that will produce artificial immunity, or even greatly increased resistance to tuberculosis infection, it is to the laboratory that we must look for such an achievement.

Along these lines, laid down by its founders, and which I have briefly touched upon, the National Association for the Study and Prevention of Tuberculosis bids fair to work out its destiny.

On the spirit of a work like this depends its life and success. The motive which has brought you together, and the spirit which has made possible the existence of the National Association, is to my mind the best guarantee of its success; for its work represents the highest type of unselfish human endeavor and the highest aim of a noble profession; namely, the struggle for the existence of others—a struggle which will not be rewarded even by the gratitude of those whose lives you will save, for they will never even know that they have been saved.

If the National Association succeeds in coordinating and binding together in one sustained and well-directed effort the scattered energies which have sprung into life all over this great country, if it can secure the cooperation of the sociologist, the legislator and the philanthropist, if its organization is complete and its members have become imbued with the greater meaning and true spirit of cooperation—a cooperation ever ready to sacrifice selfish aims to the success of a great cause—a cooperation which to the athlete means team work and to the soldier discipline—it cannot but prove a powerful instrument in the struggle against tuberculosis in this country.

It has been said—"the degree of civilization of a people will in time be indicated by the figures of its death-rate." If this be so the National Association has indeed a great responsibility; one which it nevertheless seems well fitted to assume.

## THE EDUCATIONAL TREATMENT OF "TICS."[1]

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IT is my purpose to call attention to some recent views regarding the effective treatment of tics. The change in therapeutic principles has been brought about largely by a change in the conception of the disorders in question, and we cannot discuss the former intelligently or satisfactorily without dwelling for a very few minutes upon the essential nature of "tics" or "habit-spasms."

Everyone who has been called upon to classify functional disordered movements has found great difficulty in distinguishing between "tics," habit-chorea, general choreiform movements, myoclonia, paramyoclonus and the like. The subject is complicated by the suspicion of hysteria, which often arises; then again "reflex

[1] Read before the N. Y. Academy of Medicine, April 20, 1905.

neuroses" have been made to include tics and many choreiform movements, and yet none of these is ever truly reflex in origin. If the entire series of reflex neuroses were eliminated from neurological text-books, neurological science would be none the worse for it. As a matter of fact, there are, to my mind, no reflex motor neuroses in the physiological sense, *i.e.*, a peripheral sensory irritation carried centripetally and resulting in a centrifugal motor impulse.

To clear the atmosphere, it may also be stated at the outset that tic douloureux is an old-fashioned designation—an unfortunate misnomer—and has nothing whatever to do with true tics; even the facial spasm observed particularly in the senile period does not belong to the class of cases to which we are to give some thought. The advance in our knowledge of habit-movements is due chiefly to the French school, beginning with Charcot and Noir and ending with Brissaud, and his pupils Meige and Feindel, who have written an excellent monograph of over 600 pages on tics and their treatment. The subject was discussed at the Twelfth Congress of French Alienists and Neurologists in 1902; Noguès, Grasset, Pitres, Ballet, Cruchet, Crocq and others giving their views with all the accuracy and picturesqueness of description so characteristic of French clinical writers. There can be no doubt, on the other hand, that the older writers in Germany, France and England, Friedreich, Trousseau and Gowers, for instance, recognized some of the peculiar features of this special group of disordered movements, and Oppenheim had anticipated some of the conclusions reached by the physicians of La Salpetrière. In this country Osler has at various times attempted to classify and to describe the various forms of tics, and Dana and myself have also struggled with the subject.

According to our present-day conception, tic is an involuntary movement which can for a time be controlled, or even inhibited, by the will. We have had to borrow the term from the French, as the Germans have also done. The spirit of our language will not sanction the adoption of some of the French derivatives. The victim of tic is called a "tiqueur." If we were to publish the records of a "ticker," as the French have, we might be accused of irrelevant, if not unscientific studies. The only proper English equivalent is habit movements or habit-spasm, but the French have endeavored to differentiate between tic and spasm and are inclined to discard the latter term.

Brissaud, for instance, claims that a spasm is "a motor reaction (say movement) resulting from irritation of some part of the spinal or bulbo-spinal reflex arc. The irritation which excites this spasm is produced by some morbid cause, and may be either peripheral or cortical." In this sense spasm is a true convulsive action, a muscular contraction rather than a movement.

Tic is a coordinated or systematized movement with a definite object in view, repeated frequently and in exaggerated fashion. Frequent repetition of such movements creates the habit, and the habit once established, the movements become automatic.

Meige has made a fine point in this discussion by showing that tics are concerned with functional movements and chiefly with such which are partly reflex and partly subject to the will (habit winking, habit cough). Most of these tics have been purely reflex movements at the start; the reflex actions are voluntarily repeated and through frequent repetition become automatic, just as the child at first has to learn the movements necessary for walking or in writing. As it repeats these exercises again and again the movements, though conscious, become more and more automatic. Guinon claims that tic is a conscious movement at all times. Lutulle protests that it is an unconscious act. Meige and Feindel have endeavored to harmonize these views by stating that the patient is conscious of the tic before and after the movement and not during the act. That distinction is a subtle one indeed, whereas the chief point would seem to me to be not whether the movements are conscious or unconscious, but whether they are intentional.

When a tic is firmly established the movements are not intentional. It is certain that they could be suppressed if the will to do so be strong enough and be exercised to that end. To a very limited extent I believe this to be true also of choreic movements except those dependent upon organic disease. The power of control is not so strong as is the motor impulse and it is this abnormal psychic condition which is the controlling factor in the genesis of tics. "The very essence of a tic is that it is an abnormal motor manifestation dependent upon an abnormal psychic condition."

We have seen that a tic may be the habitual repetition of a normal function, habit-winking, habit-coughing, respiratory spasm, etc., but it may also be concerned with a new function discovered by the individual, as the Frenchmen say. Thus, one patient of mine discovered that by throwing his head backward he could produce a crackling sound in the nape of the neck, he repeated it again and again until the habit of throwing the head backward became an irresistible impulse and his special form of tic was firmly established. When once established the patient was able to subdue the movements in part, but it was a great strain upon him to inhibit them altogether. The attempt to check them caused the patient to break out in profuse sweat and to get into an extreme condition of general motor restlessness. Everyone who has observed such patients will grant that it is a struggle of no mean order to endeavor to check a full-fledged habit-movement. The vigor of the contractions, and the inordinate frequency of repetition are the special characteristics of these motor abnormalities.

If tics were oddities merely of muscular contraction, we might dismiss them with a word or two and with a regret that they are so difficult to cure, but they have a far deeper significance. They at times are often associated with mental disease and with evident psychic and motor disturbances; they are the first expression of mental degeneracy. They may be developed early in life, even in very young children, and if not seriously dealt with, will lead to disastrous results. Parents are too fond of admiring the tricks of their little ones, but if tricks are "tics," it will be well to put an end to them as soon as may be. The simple tic may effect any group of muscles; those of the face and neck including the platysma, are commonest. They are not merely muscular contractions, say of the frontalis of the orbicularis oris, or of the orbicularis palpebrarum, but they are the more complicated movements of winking, snuffling, whistling, shrugging of the shoulders, twisting of the neck, and soon, in children, we also observe tics "consisting of screaming, snapping, scratching or biting habits." Speech habits or speech tics are very distressing.

A few weeks ago, a boy seven years of age, was brought to me from the western part of the State, whose only symptom was a loud explosive noise which he emitted at least ten or fifteen times every minute. He was an only child and quite beyond parental control, as such children often are. There was no perceptible clonic movements of the diaphragm and no tangible cause for the explosive sounds. There was nothing choreic about the child. I proposed definite discipline and educational treatment, but the parents knew better and were certain that fresh air would cure him. By accident or otherwise this boy may have discovered that he could produce such a sound and a few repetitions after this discovery were all that were necessary to start him upon the habit.

During this present week I have seen another child, two years and nine months old that had been born with instruments but had remained entirely normal in spite of this and had no convulsions, was a bright baby and began to utter a few words at the early age of eight or nine months. During the second year of its life it had head-nodding (gyrospasms), an infantile incoordination of movement which differs from others only in this that it seems to disappear spontaneously. The parents of this child, who are intelligent and careful of their first offspring, have noticed of late that while the child speaks well it halts every now and then and has retarded and then explosive articulation—a true speech tic which will have to be checked promptly if the child is not to form the habit.

As I have said, these speech habits are not uncommon. An old student friend of mine, who has since become a celebrated astronomer, was in the habit of winding up every sentence with a rising inflection and the usual interrogatory utterances, "Hm, ah, eh?"

You will notice that we pass easily in a consideration of this subject from entirely motor phenomena to those of a psychic or psychomotor type. The chief difficulty is that there is not sufficient strength of will to check the developing habit. Many of the cases of torticollis are explained, and the French thus have invented the term "mental torticollis" for such cases.

Some years ago a bookkeeper visited my clinic who had been in the habit of transferring accounts from one ledger at his left to another upon his right. Hundreds of times during the day the head was turned quickly from left to right, the habit became established and the movements could not be suppressed after working hours. The result was a true and an annoying condition of "spasmodic" torticollis. Some improvement followed upon the directions given him to rest the head on a support so as to prevent the movements, and to turn the head forcibly in the opposite direction.

In addition to all these simple tics we have those, as Osler put it, with "superadded psychic phenomena." The "maladie des tics convulsifs," Gilles de la Tourette's disease, is characterized by a facial tic, by other tic movements, by explosive and often foul utterances (copralalia) by repetition of words and actions (echolalia and echokinesis) and by imperative concepts. These utterances are as uncontrollable as are the phychic phenomena. The impulse to repeat definite words (peculiar gestures, etc.), the doubt as to whether the light has been turned out or the letter sealed, the fear of using a knife, of crossing the street, the impulse to pick up every scrap of paper, every pin, all those imperative ideas and imperative impulses are the psychic equivalent of the motor phenomena, and the psychic symptoms are as little under control of the will as are the muscular contractions.

Sufficient has been said, I believe, to show that the tics are not merely psychomotor phenomena, but that there is a peculiar disturbance of the will, which is mainly responsible for the persistence of the habit-movement.

In former days the treatment of this condition presented great difficulty. The ordinary sedatives and the various surgical procedures which were resorted to for the cure of some of these tics were wholly unsatisfactory. The patients were eager enough to be rid of their habits and often became intensely discouraged over complete failure of treatment.

The pedagogic or educational treatment is based entirely upon the idea that the disordered psychic and motor functions must be disciplined in various ways. The French speak of this as the "traitement reeducateur." Oppenheim claims superiority for his plan and states that the one feature omitted in the French method and included in his own is the inhibition therapy. I should like to call this pedagogic treatment common-sense treatment, and I am certain that all of us have practised it for years, but it is well to

have it put before us with a more impressive title. In all of my own cases I have insisted for years back and have made mention of this in my book, that the patient be made to stop the movement if he can, and that he perform systematic movements entirely opposed to those involved in the tic, but it is a mistake not to give dignified names to therapeutic procedures. You may tell your patient to sit in the open air for hours at a time, and yet he will not do as well as he will if subjected to "air baths," as administered at various German health resorts. To be sure the air bath is given in the woods and the patients are encouraged to disport themselves nymph-like, under proper surveillance and the protection of high fences. Just so the treatment of tics will be very much more efficient if both the physician and the patient know that the method of treatment has a special designation. I am far from underrating the value of this and think we might occasionally take the hint from the practices of our European confrères who for methods which we do not always dignify by special names use the terms "psychotherapy," "aerotherapy," and the like. Let us see what pedagogic treatment offers us in the case of tics.

The principles of this educational treatment, as laid down by Brissaud, are as follows: "The immobilization of movements" and "movements of immobilization," which translated into ordinary language means the movements are to be stopped and the patient is to perform other systematic exercises. There is to be an absolute immobility, to quote the French phrase again, "a photographic immobility" of face and limbs during an increasing period of time. The patient is to sit as though he were looking into the camera. At the first sitting he is to preserve this absolute immobility for one, two or three seconds. At each sitting a second or two are to be added and thus little by little the time of absolute quiet of all muscles is to be increased. By patient endeavor the victim of tic can manage to pass an entire hour without the slightest abnormal movement. A point of some importance is that the patient should be told in advance exactly how long the session is to last. He is to sit in a comfortable position and should be encouraged by word of mouth that he *should* and that he *can* remain immobile. In other words, the effect of suggestion and of encouragement is to be added and there is no doubt that such suggestion and assistance as may be given him in this way will make his task an easier one. If the tic patient and his physician,—a French author says,—"will form an offensive and defensive alliance against the tic, and if they will remain united they will triumph." Even though there be a tremendous solemnity about all these injunctions some good will unquestionably come of them. After this period of immobility is passed the patient should be subjected to well-disciplined movements particularly of the muscles in the region in which the tic occurs.

The entire sittings are to be of short duration and to occur several times a day. At least one sitting a day should, if possible, be directed by the physician himself. If the patient is asked to do the exercises by himself, he should perform them before a mirror so that he may have his attention riveted upon them and may be able to determine whether he is doing them correctly or not. Long after the attack has actually ceased, the treatment, more particularly the methodical gymnastic exercises, should be continued.

In addition to these exercises it is important to lay down a daily routine, just as we in this country are accustomed to prescribe during the various stages of a rest cure. For my own part, I believe that if this educational plan of treatment is to be a success it can be carried out only at a private hospital or in the home of the patient, if the patient can be isolated and be placed under the care of a competent nurse or younger physician. The exact exercises will vary according to the special character of the tic. If the patient has been subject to habit winking he is to be ordered to close his eyes, to open them, to keep them closed a definite length of time, to open them for a definite period, to close one eye and then the other. At the same time order him to open and close the mouth and if there happens to be a tic of the mouth associated with habit winking, as is so often the case, let systematic movements of the lips be carried out, and in such cases it would be well to order the patient to read aloud in a very slow fashion. It is best perhaps to make him read verses and ask him to read them most distinctly and with definite rhythm. Each case should be studied on its merits and the exact nature of its movements, particularly of antagonistic movements must be dictated by the physician. In a case of facial tic of the eyes and of the mouth the following is the program prescribed by Meige:

"Every day and three times per day at the same hours, nine o'clock in the morning and one o'clock in the afternoon, and at six P.M. the patient is, during two minutes, to stare at himself in a fixed manner before a mirror observing absolute immobility of his features. During two minutes he is to read aloud, during two minutes to speak before the glass and during another two minutes to walk up and down before the mirror. This was to be repeated three times during the day and if during any exercise an attack appears he must commence over again once or twice; if a third time is necessary he must stop and not resume until the following sitting." In the treatment of speech tics (I have no doubt many cases of incipient stammering can come under this heading), it is important to submit the patient to definite vocal exercises, making him first of all perform those which seem most difficult, teaching him to prolong vowels, to speak slowly, laying stress upon the articulation of each syllable, and finally to get the

patient to read aloud phrases, then sentences, then short stories, and so on. This same method has long since been followed by many teachers who pay special attention to the education of stammerers and of those having other speech defects. In these latter cases the ordinary calisthenic breathing exercises will be of great assistance.

I have said enough, I believe, to convince you that in reality this pedagogic method does not contain anything distinctly new, but some credit is due to the various writers who have taken the trouble to give the minute details of treatment, and I have no doubt that the success attending the educational treatment of tics will be just as great as has been that which attended the employment of the definite methods outlined by Fraenkel, of Switzerland, which we now employ universally in the treatment of locomotor ataxia. The special point about the educational treatment of tics is that it is based entirely upon the influence which the mind is known to exert over these irregular movements and as the method is directed entirely to the development and strengthening of such influence it is surely worth our while to study the method and to practise it carefully.

## LAVAGE OF THE RENAL PELVES IN THE TREATMENT OF BRIGHT'S DISEASE.

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MY experience in the treatment of Bright's disease by lavage of the renal pelves is far too limited to determine absolutely the uses and limitations of the procedure, but it has shown me that much good may be accomplished by its employment in selected cases if the ureters be properly catheterized and the lavage carefully given. On the other hand, if the treatment be not carried out with the utmost care and attention to detail, no benefit will be derived from it and the patient may be made much worse.

Last June, in a paper read before the American Urological Association, at Atlantic City, I stated that beginning nephritis could be cured by lavage of the renal pelves and suggested that even certain of the more advanced forms of nephritis might be improved by resorting to this treatment. I also stated that in chronic interstitial nephritis, where contraction had already begun, lavage of the renal pelves could not possibly do any good. Nine months of additional work in lavage of the renal pelves has shown me that I was right in my prognosis and I have found that chronic parenchymatous nephritis that has not reached the stage of contraction is wonderfully improved, whereas contracted kidney, whether the origin was a parenchymatous or interstitial nephritis, is not improved and often made worse by lavage.

In February, 1904, one of my patients, whom I was treating for chronic urethritis, was found to have marked pyelitis together with a beginning Bright's disease. His urine contained in addition to pelvic epithelium, a small amount of albumin, many cells from the tubules of the kidney and a few hyaline and granular casts.

To cure his pyelitis, he was put under treatment by lavage of the renal pelves, and much to my astonishment, the casts, albumin and tubule cells disappeared from the urine in a very short time. Since then I have treated a fairly large number of cases of nephritis in all its various stages, by lavage of the renal pelves, and the purpose of this paper is to present the results of such treatment in so far as I have gone.

The various causes of nephritis, as enumerated by different authors, are circulatory, as in heart disease; irritants or poisons circulating in the blood as the various drugs, faulty metabolism resulting in lithemia, etc., and irritants not yet determined; and the extension of inflammation from the renal pelves. The latter cause for inflammation in the kidney, it seems to me, has not been sufficiently investigated and we will in future find that many cases now ascribed to unknown irritants are really due to extension of inflammation from a pre-existing pyelitis.

Strümpel says: "If we look for etiological conditions in cases that have a chronic course from the beginning, we can often discover nothing at all. The disease seems to have developed of itself in previously healthy persons." He thinks there is probably some "unknown toxic or infectious agency that acts on the kidneys." Opposed to this I wish to give the results of my work in the renal pelves in the treatment of catarrhal pyelitis. I have treated 142 patients suffering from this condition who gave no symptoms of nephritis. Of these, 46 had more or less involvement of the kidney, as shown by the chemical and microscopical findings. In all probability the inflammation would have continued and extended in the majority of these 46 cases until well-marked nephritis would have been recognized by the symptoms present. It is quite probable also that in many of the 96 cases who had no kidney lesion the inflammation would have extended to the kidney structure. It is this class of patients in whom the chronic nephritis seems to have "developed of itself in a previously healthy person."

Catarrhal pyelitis may exist for a long time without causing the patient much discomfort; and the few symptoms that are complained of may be ascribed to indigestion, rheumatism or lumbago. One of my patients who had pyelitis with slight involvement of the kidney had had his back cauterized several times without benefit for what had been diagnosed as lumbago, yet two treatments of the renal pelves by lavage entirely relieved the pain in the back.

In speaking of the cause of interstitial nephritis, Tyson says: "Long-continued cystitis, especially following gonorrhea, is undoubtedly a

cause in a few instances, the inflammation travcling up the ureter to the pelvis of the kidney and thence to the intertubular tissue." Strümpel does not mention the variety of inflammation that is caused by ascending inflammation. He says: "One way in which the morbific agent may also enter is especially important—namely, from the lower urinary passages, the bladder, and the pelvis of the kidney, upward into the kidney." Two quotations from Strümpel which bear directly on the etiology are, first: "The anatomical changes of acute nephritis show a continuous series from the mildest to the severest degrees, according to the intensity of the injurious action. The mildest changes, which, as we have said, are not called actual 'inflammation,' but usual simple parenchymatous degeneration affect exclusively the parenchyma of the kidney—that is, the epithelium—while the interstitial tissue, the connective tissue, and the vessels remain perfectly normal. This fact is of prime importance, since it implies that, in almost all the injurious influences acting on the kidneys, the specific renal parenchyma itself is diseased first and before the other." Again: "There is no essential distinction between the anatomical lesions of the kidney in acute and chronic nephritis. The changes that are seen are essentially the same, only they develop and extend more slowly in the chronic forms."

If we find among young men a considerable number of cases of catarrhal pyelitis with slight invasion of the kidney, as shown by the presence in the urine of degenerated tubule cells and perhaps a little albumin, we have already found the chronic parenchymatous degeneration of Strümpel, and later these same patients will probably have occur in their kidneys the interstitial changes that are found in every case of advanced chronic Bright's disease. I think if the subject is studied more closely with relation to a preexisting pyelitis that the origin of many a case of Bright's disease, which apparently began "of itself," will be explained. If this prove to be correct, the percentage of Bright's disease recognized as having originated from a gonorrhea, will be markedly increased. It will also, to a certain extent, account for the fact that there are more cases of chronic nephritis in men than in women, because gonorrhea is more frequently followed by cystitis in the male.

I have come to regard the presence in the urine of degenerated epithelium from the renal tubules on repeated examination, whether albumin is present or not, except in floating kidneys, as indicating a beginning nephritis. We not infrequently find tubule cells in the urine simply due to the irritating effects of the oxalate of calcium or to uric acid, but these cells quickly disappear from the urine after the oxalates or uric acid have been eliminated, if there is no nephritis present. The cells are also much less degenerated in appearance when due to irritation than when due to inflammation. In all urinary analyses I believe the sooner the examination is made after voiding, the more accurate will be the findings.

In speaking of these cases I shall refer to beginning nephritis as parenchymatous degeneration. The pronounced cases will be called parenchymatous or interstitial nephritis according as the parenchyma or interstitial portion of the kidney seems more involved. And yet the two forms are so closely allied that it is sometimes almost impossible to differentiate one from the other.

I have treated 46 cases of parenchymatous degeneration and in all but eight the tubule cells and albumin have disappeared from the urine. Six of these eight are still under treatment, the other two having discontinued treatment upon the relief of the symptoms for which they consulted me. Among these 46, there were six who had casts, both granular and hyaline, in the urine. They had passed the stage of parenchymatous degeneration, but the nephritis was not so pronounced as to class them among the advanced cases. Every one of these six has been discharged cured, the urine having remained free from all evidence of nephritis for quite some time. I have watched four of these six for a period of from three to four months and there has been no indication that the inflammation had or would return.

Of the other 38 cases of beginning nephritis all presented tubular epithelium in the urine. Sixteen had no albumin and 22 showed more than a trace. The time required to cause the tubule cells to disappear varied greatly. In some, two weeks were sufficient, whereas, in others, and these were the ones who had the largest amount of albumin, these cells persisted for twenty weeks. The longest time required to cause the albumin to disappear in these mild cases was eleven weeks and the shortest, one treatment. In the latter case the albumin was not found after first treatment, but the tubule cells persisted for four weeks. Nearly all of the 38 cases remained under treatment for pyelitis or some urethral, prostatic or vesicular inflammation for some months after the trouble in the kidneys had been relieved and I was able to watch them closely and in not one was there evidence of a return of the inflammation in the kidney. I think I am safe in saying that they have been prevented from developing a typical case of parenchymatous or interstitial nephritis later in life.

I have treated 12 cases of advanced nephritis by lavage of the renal pelves. Three were chronic parenchymatous nephritis and were markedly improved. Their histories are appended. Two cases of mild interstitial nephritis were somewhat improved. One case of marked interstitial nephritis was considerably improved at first, but the treatment had no ultimate influence on the course of the disease. Three cases of well-marked interstitial nephritis were not in-

fluenced; neither were two who had had decapsulation performed. One patient in the late stages of interstitial nephritis was made much worse by the treatment. From this record it is seen that lavage of the renal pelves for Bright's disease is applicable only in selected cases; and the diagnosis is all important. Even with the utmost care we are not always capable of judging of the absolute condition of the kidney by the urinary and physical examination, and some cases that appear hopeless may respond to the treatment by lavage, while others, with everything apparently favorable, will not be influenced.

The question always arises as to how the beneficial action is brought about. Why does improvement in the condition of the kidney occur when the lavage only reaches the renal pelves? I have seen the improvement, but as yet have found no explanation that is satisfactory. For the first few treatments, immediately after lavage, the patient experiences a feeling of general malaise which lasts about an hour. This is followed by a feeling of well-being that lasts from two to three days. For from one to three days the urine is markedly increased in quantity and then slowly returns to the normal amount. For want of a better explanation I have attributed the improvement to the cleansing of the renal pelves of the products of inflammation, the establishment of better drainage from the kidney and the counterirritation of the ureteral catheter and the counterirritation to the kidney by the use of a hot, slightly irritating, solution in its pelvis. It is possible that the lymphatics of the kidney take up some of the antiseptic solution and carry it through the organ and the beneficial action occurs from this.

To follow a chronic nephritis from its inception to its termination is impossible. There are a large number of cases that have as their origin some nephritic irritant circulating in the blood, but there are a still greater number in which no such irritation can be found. It is my belief that a large per cent. of the latter cases are due to extension of inflammation from the renal pelves. The cause of the pyelitis may have been an ascending inflammation from the bladder or it may have been the irritating action of uric acid or oxalates. If we wish to guard our patients from the possibility of Bright's disease later in life, it is essential that we investigate all our urinary cases very thoroughly; even such an apparently slight thing as pain in the back should not be passed over lightly. The urine should be examined in every case. If pelvic epithelium is found, the renal pelves should receive appropriate treatment, thus preventing invasion of the kidney. The following case illustrates the necessity of a careful urinary examination:

*Case I.*—C. L., aged thirty years; married; was referred to me by Dr. Glinnen May 9, 1904. He said that he had never had gonorrhea and had had intercourse with no one but his wife since marriage. About three weeks before he was sent to me he had noticed a discharge from the urethra. This discharge continued in spite of medication and injection. When I first saw him he had mucopurulent discharge of moderate severity. A smear taken the meatus did not show the presence of the gonococcus. Both urines were quite cloudy and the microscopical examination disclosed the presence in the urine of a moderate amount of pus, and epithelium from the urethra, the prostate, the seminal vesicles, the bladder, the ureters, the pelvis of the kidney, and from the tubules of the kidney. A small amount of albumin was present. He had, then, a catarrhal pyelonephritis, ureteritis, cystitis, gonocystitis, prostatitis, and urethritis. His urethra, prostate, vesicles and bladder were treated according to the ordinary method for curing inflammation of these organs, and he was given internally the different urinary antiseptics. His diet was carefully regulated. After six weeks of thorough treatment there was only a slight decrease in the amount of his discharge and the cloudiness of his urine was only slightly lessened. I began lavage of his renal pelves on June 24 and continued it twice a week for four months. The albumin entirely disappeared at the end of two weeks and the tubule cells at the end of seven weeks. Nine weeks later no epithelium nor pus had been found in three successive treatments and his pyelonephritis was pronouncel cured. He continued under treatment for three months longer for inflammation in the prostate and was then discharged cured. During those three months the urine was repeatedly examined for renal epithelium and none was found. It is possible that in time something could have been found to have stopped his discharge, but no medicine that I tried had any effect in reducing the number of epithelial cells from the renal pelves and tubules. And it is probable that the inflammation in the kidneys would have progressed steadily and that he would have developed a marked parenchymatous or interstitial nephritis. I was never able to determine the absolute cause of the inflammation in this case.

*Case II.*—L. K., single; aged thirty-five years; cigarmaker; was referred to me by Dr. Wolbarst, who had been treating him for stricture and prostatitis. I saw him for the first time on June 26, 1904. He said that he had had several attacks of urethritis, none of which had been very severe. He had had several attacks of renal colic, the first occurring thirteen years ago. He complained of a constant boring pain in the back and of frequency of urination, being compelled to pass water every two hours by day, but none at night. Examination showed the urine to be slightly cloudy in both specimens, the first containing a few prostatic points. The urethra was of normal caliber, but at two points slightly thickened. Prostate normal size, but soft and

flabby. Microscopical examination disclosed the presence in the urine of a very large number of cells from the renal pelves and many from the renal tubules. A small amount of albumin was present. He was given his first lavage June 28, and the treatment was continued twice a week until January 20, 1905, when the inflammation in his kidneys was declared cured and he was returned to Dr. Wolbarst for further treatment of the prostate. The albumin had disappeared in the fifth week of treatment and the tubule cells in the ninth. A peculiar feature of this case was that after the first few lavages he passed large phosphatic concretions, about the size of pinheads. After a month no more were seen. They were not large enough to be called calculi, but were probably the cause of his renal colics. He came in to see me March 3. He has no pain and no frequency. His urine is absolutely free of kidney epithelium and he is undoubtedly saved from a further extension of the inflammation in the kidneys.

These two cases will serve to illustrate the effect of lavage of the renal pelves in treating chronic parenchymatous degeneration, or beginning Bright's disease.

*Case III.*—Typical case of subchronic parenchymatous nephritis without tendency to cirrhosis. Cause, probably ascending inflammation from the bladder. W. H. S., aged thirty-two years; clerk; came to the office June 20, 1904. His waxy ears, lips and complexion, with dulness of eyes and general appearance showed him to be in the last stages of parenchymatous nephritis. He had had a urethritis fifteen years previously, but considered himself cured. In August, 1903, he had had pains in the back which had been ascribed to rheumatism and indigestion. In September he began to have headaches. The indigestion became worse, was temporarily relieved by essence of pepsin, but the headaches continued. At about the same time he began to be troubled by insomnia and nervousness. In December the headaches had become more frequent and severe. He felt languid and indisposed to exert himself; had no appetite; nausea in the morning; buzzing in the ears; pain in the back; puffiness under the eyes; spots before the eyes. All these symptoms continued until March, 1904, when he apparently had an acute attack of nephritis after exposure to cold. From that time until I saw him he had had considerable edema, at times becoming very marked, with all the other symptoms that usually accompany parenchymatous nephritis. During May he had had three attacks of uremic convulsions. He had been troubled constantly by dyspnea on exertion, and at times had had considerable nausea. He said there had been a constant uriniferous odor to his body. He was unable to walk over two blocks without resting and said that it seemed impossible for him to stoop to pick up his shoes. From March until June 13 he had not worked, but had spent the major part of this time in bed. He had visited several of the mineral springs and had been somewhat improved. When he came to me he had been at work one week and during that time had failed rapidly. Often while at his desk he would be seized by an attack of dizziness and have to grasp the desk to keep himself from falling. His face and ears were waxy; eyes lusterless; lips almost of the same color as the face; nose pinched. There was marked edema of the legs to above the knees and edematous area over the sacrum. His normal weight was 117 pounds, but on June 20 was 121, the increase he attributed to "water." The pulse was 88 and fairly high tension. Heart moderately increased in size; first sound roughened, second sound accentuated. Quantity of urine said to be 50 to 60 ounces per day. Urine quite cloudy; sp. gr. 1.020, and solidified on boiling. Microscopical examination showed a large number of granular and hyaline, and a few blood and epithelial casts, with a moderately large number of pelvic and tubule cells in a state of fatty degeneration. He was treated by lavage of the renal pelves twice a week and at the end of two weeks no casts could be found in the urine. The albumin had decreased to 50 per cent. by bulk—by Esbach's test was 5 gms. to the liter. The report of August 5 stated that there were no casts, very few pelvic and tubule cells and the albumin was 3½ gms. to the liter. From that date he was treated only once a week. On August 12 a few hyaline, granular and epithelial casts were found on both sides; albumin 3 gms. on the right, 4½ on the left. On August 19 there were no casts and the albumin had dropped to 2 gms. on both sides. He contracted a severe cold on August 27, and on September 2 the albumin was 5 gms. From then until September 28, when his treatment was discontinued, he usually showed a few granular casts and the albumin gradually dropped to 3 gms. When he came to me he was on a very restricted diet and was taking diuretin and nitroglycerin. I made no change in either the diet or medication. He has reported to me once a month since the lavages were discontinued and I have found that his condition still continues to improve. There has been a steady decrease in the amount of albumin and the casts are harder and harder to find. The patient tests his own urine every morning and finds that every time he takes salts that the albumin is markedly increased. He reports that the albumin varies from 2 per cent. to 10 per cent. by bulk, but when he takes salts it will jump up to 25 per cent. The last urinary examination that I made showed the albumin to be 1 gm. to the liter, and only six granular casts were found in looking over four slides. It is now nine months since he began treatment with me, and during that time he has lost only three days from work, when he was confined to the house last fall with a severe attack of bronchitis. He tells me that he is feeling better and stronger than he has at any time since August, 1903.

During the blizzard early in February he walked three miles through the snow to and from his work and said that it did not tire him at all. The case is a striking one, showing as it did from the very beginning of treatment by lavage improvement which cannot possibly be ascribed to anything but lavage of the renal pelves. It is not probable that he will ever be cured, but he has been put into such condition that he is able to work and support his family. He has been made comfortable and his life has undoubtedly been prolonged many years.

*Case IV.*—Typical case of parenchymatous nephritis, probably due to irritants circulating in the blood. Miss N., aged fifteen years; schoolgirl; came to the office September 14, 1904; gave the following history: In May, 1903, the morning after a hard game of basket-ball, she had quite severe pains in the lower part of the abdomen, radiating to the back, and had noticed that there was a large amount of blood in the urine. She was confined to her bed for two weeks, but just so soon as she was allowed to be on her feet again blood appeared in the urine. During the summer of 1903 she was taken to mineral springs in California and was kept on a milk diet and given medicine by the mouth, but the blood still persisted in her urine. She was kept in bed during September and October, 1903, and since that time a small amount of blood has occasionally been seen in the urine. Albumin was discovered soon after the blood was first seen and has persisted ever since. It has averaged from 5 to 10 per cent. by bulk.

When I first saw her the only symptoms complained of were an occasional dull headache with a general feeling of lassitude and weakness. There were no pains and no frequency of urination. No edema. No disturbance of vision. She was very anemic and appeared to be very weak. Pulse 95 and not increased in tension. Heart not increased in size and heart sounds normal. An Esbach's test showed 4 gms. albumin to the liter. Sp. gr., 1.014; brick-dust sediment; urea, urates and phosphates diminished. Microscopical examination showed a moderately large number of crystals of uric acid; few blood globules; few to moderate pus corpuscles; few to moderate number of epithelial cells from the renal tubules, the renal pelves, the ureter, the bladder and vagina. Few to moderate number of hyaline, granular, granular-fatty and epithelial casts. The patient was catheterized and treated by lavage of the renal pelves the following day. The report for the separate urines is practically the same as for the mixed, with the exception that there were no bladder nor vagina cells and the crystals of uric acid were absent. The inflammation was slightly more pronounced on the right side.

After the first and second treatments severe renal colics occurred, but thereafter no disagreeable symptoms manifested themselves. Very shortly after lavage was begun the number of casts became fewer and fewer. At times none could be found and then a few would be reported. The number of epithelial cells decreased to quite an extent and became more healthy in appearance. The albumin fluctuated markedly; at times being one-half gm. to the liter, then running up to 2 gms.

The patient was given a mixed diet; only veal, pork, the indigestible vegetables and all fried food being forbidden. She was attending school all through her treatment and was allowed to take moderate exercise in the open air, but never violent enough to sweat. The various modern uric acid solvents were tried, but without result. Old-fashioned rhubarb and soda, however, decreased the uric acid to quite an extent. Basham's mixture seemed to increase the albumin, so she was given tablets of iron, arsenic and strychnine with good results. She was treated three months and then sent to her home. The examination of her urine just before she left New York showed very few granular casts on both sides; very few tubule cells; moderate number of pelvic cells; few uric acid crystals; albumin three-quarters gm. to the liter. The patient's general health was markedly improved. Her mother, who had not seen her from the time she began treatment wrote me that she considered the change in her daughter's appearance little short of miraculous. The patient writes that she is now feeling twice as well as she ever did in her life. Owing to her youth she may entirely recover. She is now on a very restricted diet consisting of milk, well-cooked cereals, fish, white meat of poultry, clams and oysters. She is allowed lettuce, celery, asparagus, spinach and string beans. The report of the urinary examination made February 19, two months after treatment was discontinued, is: Albumin, one-thirtieth of 1 per cent; urea, 6 gr. to the ounce; sp. gr., 1.012; few crystals of uric acid; very few blood globules; few pus cells; few tubule cells; few cells from the renal pelves, bladder and vagina; no casts could be found.

I should have preferred to have kept this patient under treatment for one month longer, but it is my belief that she will continue to improve so long as she obeys instructions.

*Case V.*—Mr. B., aged forty-four years; manager; came to the office November 20, 1904. He had two attacks of urethritis twenty years ago. Each was quite severe and each lasted three months, but the patient thinks he was entirely cured. He had been perfectly well up to three months ago when he noticed he lacked the energy he formerly possessed and became easily tired. There was dyspnea on exertion. He had occasional numbness of the hands and feet; occasional headaches in the occipital region. Eyes would become blurred at times, and he often found great difficulty in reading unless there was a very strong light. Was extremely nervous and troubled by insomnia. No other symptoms.

*Urinary Analysis.*—Amount said to be 33 ounces; sp. gr., 1.022; urea, 330 grs.; urates phosphates and chlorides diminished; albumin, one-half gm. to the liter; crystals of uric acid, few to moderate; few pus corpuscles; few epithelial cells from the tubules of the kidney, renal pelves, ureters, and bladder; few to moderate number of hyaline and epithelial casts. He was very irregular in his treatment on account of business engagements and because of the extreme sensitiveness of the ureters, a proper lavage could not be given on the first two attempts. He has had only eight thorough lavages of the renal pelves, yet all his symptoms have disappeared. Even the eye symptoms have been relieved and he now reads as well as ever. The urinary analysis does not show so marked improvement as does the general condition. The albumin is now approximately 1 to 6 gms. to the liter. The uric acid still persists. The casts are fewer and occasionally entirely absent. The number of cells from the renal tubules, pelves and ureters have diminished slightly. I feel confident that if he were treated twice a week for about three months the inflammation in the kidney would be absolutely cured. He has not been restricted at all in his diet and the only medicine given was diuretin, which he had taken before without effect.

*Case VI.*—Typical case of interstitial nephritis, well advanced. P. J. N., aged thirty-two years; clerk. I saw him at his residence in consultation with Dr. C. E. Teeter. Part of my notes on this case have been mislaid so the past history cannot be given in detail. He had never had a venereal disease. His father died of gout about twelve years ago. The patient had been confined to his bed for three months and had been on milk diet and taking diuretin, nitroglycerin and strychnine. For three weeks he had vomited nearly everything he had taken by the mouth and was exceedingly weak. Pulse 94, and of very high tension. Heart considerably hypertrophied and second sound markedly accentuated. There was no edema. I advised against lavage of the renal pelves as not indicated in this case, but I performed it at the patient's request. The urinary analysis of the separate urines showed that both kidneys were affected equally. The albumin was 3½ gms. to the liter; urea, 4 grs. to the ounce; few to moderate blood globules; a few pus corpuscles; few granular casts; a very large number of epithelial cells from the renal pelves; moderate number from the renal tubules; few crystals of uric acid. Immediately after the first treatment the nausea entirely disappeared and he felt very much improved generally. He came to New York and was in the Post-Graduate Hospital for two weeks, receiving while there four lavages. Then he considered himself well enough to go home and come twice a week for treatment and he followed out this plan against my advice. The examination of the urine taken at the last treatment, while he was in the hospital, showed that the albumin had dropped to such a small amount that it could not be accurately measured by Esbach's test. The epithelial cells diminished considerably and no casts could be found.

On his first visit to the city after leaving the hospital he had an attack of heart failure and from that time he rapidly failed. I gave him two lavages at his home, but without result. He died late in November. This case will have to be put down as a failure, although the distressing symptom of nausea was at once relieved and he was generally improved at first. If he had been kept in bed all through his treatment perhaps the story would have been different. Yet he could never have shown the wonderful improvement that occurred in Case III.

Lavage of the renal pelves requires the utmost delicacy in handling the instruments and the injections through the ureteral catheters must be made with patience and gentleness. Asepis must be rigorously observed not only in regard to the cystoscope and catheters, but the hands of the operator and the urethra of the patient must also receive attention. The least roughness in the use of the cystoscope may cause injury to the urethra and vesical trigone. Lack of delicacy in the passage of the ureteral catheters may cause hemorrhage from ureters. The use of too strong or too irritating solutions may cause severe renal colic; and an injection that is too copious or given with too much force causes considerable pain and will not benefit the patient.

I consider the straight view cystoscope much preferable to the angular view in that it causes the patient much less pain; there is less danger of injury to the ureter; the character of any obstruction in the ureter may be more easily determined; and the entire operation of catheterization of the ureters is much more quickly completed with this form of instrument. Also I have been able to catheterize easily with the straight view cystoscope several patients on whom I had failed with the angular view. The instrument with which I have done most of my work is the one devised by F. Tilden Brown. I have had a modification of this instrument made so as to preserve its many valuable points and overcome its disagreeable features. With this modification it seems impossible for any one to injure the urethra or trigone.

The medication must be selected to suit each case. We often find one solution distinctly irritating while another is soothing. It not infrequently happens that a patient will be improved for a time by using one solution and then it will become necessary to change the form of injection to obtain the result desired.

The drugs that have been of more service in my hands in the treatment of nephritis by lavage are protargol, albargin, silver nitrate and argyrol. Protargol and albargin are used not stronger than one-quarter to one-half of 1 per

cent. Silver nitrate in a vehicle of boric acid is used 1 to 8,000, increasing slowly to 1 to 2,000. Argyrol, freshly dissolved, is used at 5 per cent.

*Method of Lavage.*—The time occupied in giving a lavage varies with different patients. Those who have a tolerance for solutions in the renal pelves require about fifteen minutes, while patients with irritable or sensitive ureters require half an hour. In the former cases the solution is thrown in slowly until there is a feeling of fulness over the kidneys; in the latter only about a dram should be thrown in at a time. In all about two to four ounces are used on each side. The injection should always be given at a temperature above that of the body—105° to 110° F. seems to be best borne by the patients. If the ureters are very sensitive the patient may, on the first injection, experience colicky pains, become nauseated and sweat profusely. If this occur it is best to remove the catheters immediately and postpone further lavage for at least one week.

A proper lavage of the renal pelves consists of repeated injections of small quantities of a medicated solution into the renal pelves through a catheter that has been passed well up the ureters toward the renal pelves. It is not necessary that the eye of the catheter be in the renal pelves, but it should be within six inches of it. After each injection the fluid is allowed to flow out through the catheter before a second injection is given. Never inject large quantities with the expectation that the fluid will run down the side of the catheter into the bladder. No one would distend the urinary bladder with the expectation that the fluid would flow out of the urethra by the vesical catheter. I have seen intense renal colics caused by the injection of only 1½ drams, and I have often wondered what would have happened had I injected more. As the catheter is withdrawn the solution is deposited all along the ureter so as to treat that organ. The patient is then requested to pass the water remaining in the bladder; a Janet wash of silver nitrate is given and the operation is completed. When I first began lavage of the renal pelves one of my patients developed a urethral fever after treatment. I have seen none since. In the early months also I had three cases of infection of the ureters from the catheters, but at present that is an unknown accident. The only disagreeable feature of this work at present is an occasional renal colic which may come on while the patient is on the table. Usually one-thirtieth gr. strychnine will relieve, but morphine is occasionally required.

In conclusion I wish to call your attention to the following points:

1. Not enough importance has been given to the probability that a large percentage of cases of chronic nephritis, in whom no discoverable cause for the inflammation can be found, are really due to extension of inflammation from the renal pelves.

2. Lavage of the renal pelves is only applicable in selected cases of nephritis.

3. Lavage of the renal pelves will certainly cure a beginning nephritis that is due to extension of inflammation from the renal pelves.

4. Lavage of the renal pelves in subchronic and chronic parenchymatous nephritis will check the disease and markedly improve the general condition of the patient, in those cases that have not reached the stage known as cirrhotic kidney.

5. Lavage of the renal pelves for nephritis by one who is not properly trained in the technic cannot possibly improve the condition of the kidney and may do harm.

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## FETAL MANIFESTATIONS OF THE TOXEMIA OF PREGNANCY.[1]

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IT was thought that in the consideration of the toxemia of pregnancy, it might be of interest to present some of the literature in regard to its occurrence in the fetus and to record the writer's own experiences.

The high mortality of the infant born of eclamptic women is attested by various observers. Bar, out of 80 cases of eclampsia, found that in 37 or 46 per cent., the fetus was dead born; 27 others died within the first three days after birth, and still others within a few weeks. He ascribes as a cause the high blood pressure that makes hemorrhages in the placenta. He also observed changes in the central nervous system, liver and kidneys.

In seventeen cases hemorrhages were noted in the meninges, liver and kidneys. Fatty degeneration was also present in the liver and kidneys, although less severe than in the maternal organs. He regards these manifestations as secondary and thinks they furnish evidence against the fetal origin of the disease. They may be, he says, of traumatic origin, rarely they are the result of infection, but are usually agonal and are not characteristic of eclampsia.

The number of cases of fetal toxemia recorded in the literature is small, and they have been regarded from two standpoints: First, as furnishing evidence that eclampsia is due to some poison generated in the mother and transmitted to the child; secondly, as offering another theory for the origin of the disease.

The transmissions of other toxins from the mother to the fetus, although an obscure chapter in placental physiology, has been sufficiently well demonstrated to lead us to believe that such may be the case in the toxemia of pregnancy.

Schmidlechner gives the causes of fetal death as due to: (1) high temperature; (2) disturbances of placental respiration from the changes of metabolism; (3) pathological changes in the

[1] Read as part of a Symposium on Toxemia of Pregnancy, at the New York Obstetric Society, November, 1904.

composition of the placental blood; (4) the transmission of infectious substances or other poisonous products. He cites a number of observations relative to the transmission of various toxins from the mother to the fetus. The demonstration of various gases in the fetal blood by Zweifel, Fehling and Porax; the presence chemically of chloroform in the fetal blood from a patient taking chloroform during labor; the demonstration by spectral analysis of coal gas in three children by Breslau and Freund; the salts of quinine by Runge and Porax, strychnine by Guinard, potassium iodide by Dührssen, and morphine by Peaslee and Thomas. He also notes the transmission of various infectious diseases from the mother to the fetus, such as typhoid, cholera, pyemia, septicemia and tuberculosis. Pregnancy, he says confers no immunity against infections, but typhoid and scarlet fever rarely occur, and cholera and smallpox are comparatively frequent, and their course is usually very severe. He considers the interruption of pregnancy to be due to the death of the fetus as pains rarely appear first. Sixty-three per cent. of typhoids abort, and the Widal reaction and cultures have been demonstrated in the fetal blood.

In cholera 54 per cent. abort. The vaccine virus, however, usually has no effect on the fetus, as, in mothers repeatedly vaccinated during pregnancy, subsequent vaccination of the child is almost always positive. Schmidlechner performed experiments upon nineteen pregnant animals with the diphtheria toxin and made the following conclusions: (1) A portion of the toxin is transmitted to the fetus and causes the same changes as in the maternal organs; (2) the intensity of the changes depends upon the quantity of toxin injected into the mother; (3) the changes develop quicker in the fetus and in higher grade than in the mother; (4) the path is through the placenta; (5) a very short time is required for the transmission; (6) most of the toxin in the fetal circulation remains for a long time unchanged, and the injection of this blood into another animal causes the same changes as were present in the first poisoned mother and fetus.

Bossi says that, except for diphtheria and its toxins, diseases in pregnancy are more acute, run a higher temperature, and are more fatal, frequently causing abortion, especially in the latter months, and that bacteria may be found in the placental and fetal blood in a number of cases.

The occurrence of convulsions in both twins born of an eclamptic mother, as recently reported by Brettauer, furnishes very satisfactory clinical evidence of the transmission of the eclamptic poison. Numerous other clinical observations have also been made. The presence of jaundice at birth in 56 infants out of 62 born of women who suffered from grave jaundice in pregnancy is reported by Lomer and is certainly suggestive, in the light of our present knowledge, of the toxemia of pregnancy. Cragin reports a case of an infant born of an eclamptic mother with general muscular contractures, but the possibility of intra-uterine rigor mortis in this and other conditions, as presented by Feis and Wolff, will demand careful histological examination before accepting such a case as a demonstration of the transmission of the eclamptic poison.

The presence of the disease in the fetus, as shown by post-mortem findings, is recorded in very few intances. Dienst, in 1902, reviewed and critically analyzed the cases recorded in the literature and also added his own experiences. They are as follows: Six cases of Schmorl, in which the autopsy in four showed severe degeneration of the liver and kidneys. Five autopsies of Lubarsch showing hemorrhages and necroses in the kidneys and thymus, slight in the liver. He considers them not to be agonal because of the presence of hyaline thrombi. One case of Prutz, in which the death occurred during labor, showed dilatation of the vessels of the kidneys and casts in the urine. A dead fetus removed by Cæsarean section by Gottschalk, showed epithelial necroses of the kidneys. Schmid found in a child that died from convulsions, superficial hemorrhages, cloudy swelling and miliary necroses in the liver and kidneys; casts were present in the urine.

Ebinger in five autopsies upon eclamptic children found in addition to ecchymoses of the pleura and pericardium and hyperemia of the liver, spleen and kidneys, cloudy swelling in the kidneys and heart muscle. Wilke, in one case of infantile convulsions, found an encephalitis.

Dührssen found a cerebral apoplexy in a child two days old that had had no convulsions. Dohm, in two dead fetuses removed by Cæsarean section found in one, epidural and subarachnoid hemorrhages, in the other marked venous congestion. Moraweck, in a case that had had ten convulsions, found, in addition to struma congenita and small pericardial hemorrhages, a very marked congestion of the liver, kidneys and spleen. Wendt found surface hemorrhages in different organs of a child born of a mother who had a severe albuminuria and jaundice without convulsions, but whose autopsy showed typical eclamptic changes. Knapp also found changes in the organ of a child similar to those in the mother. Dienst adds the clinical history and autopsy reports of two cases of his own, in which hyaline thrombi were found in the liver, lungs and kidneys. He also gives the result of the urinary examination in four infants, in which albumen casts and blood were found, the first time, he says, that the presence of blood has been noted in the child's urine in these cases.

Since this article of Dienst's, the writer has found a case, reported by De Lee, of eclampsia with convulsions in the child, but there is no description of the lesions with the report.

Bar and Daunay in 1903 found urobilin in the blood of an infant born of an eclamptic mother who had urobilin in the urine and blood. Very early in the present year, Dienst has added two cases to the literature. One was that of a woman,

who had suffered from toxemia for three months. An eclamptic seizure occurred during the labor, after which the fetal heart sounds ceased and the patient died in twenty hours. The maternal organs showed hypertrophy and dilatation of the heart with cloudy swelling and fatty degeneration of its parenchyma; the kidneys a chronic nephritis with acute degeneration; in the liver were fresh and hyaline thrombi. In the child's organs, the muscle striation of the heart was found to be obscure; the kidneys were the seat of cloudy swelling and fatty degeneration; there were also marked hemorrhages and edema. The urine showed red and white cells and casts; there was fatty degeneration with marked hemorrhages in the liver; in some places the cells were completely destroyed and the spaces filled with red cells; there were also red cells between the better preserved liver cells, and many recent thrombi were present in the central and interlobular veins. He considers these changes to be more recent than those in the maternal organs.

His second case he offers as anatomical proof of the course of the disease in both the mother and the child. A young primipara had been sick for two weeks, and while preparations were being made for the delivery, because of a dry labor and a weakened fetal heart, an eclamptic seizure occurred, followed in the next three hours by three others, after which recovery ensued. The child was born markedly asphyxiated and its first urine showed albumin, casts and leucin. Convulsions began in twenty-seven hours followed by jaundice and death. The autopsy showed punctate hemorrhages in the heart and pleura. The striation of the heart muscle were obscure and the cells showed cloudy swelling. There was fatty degeneration of the liver and in some places the cells were entirely destroyed; in the left lobe especially there were anemic and hemorrhagic necroses. He concludes especially from the finding of leucin in the child's urine, that an intra-uterine disease of the liver had existed.

These cases represent practically all that are recorded in the literature of the manifestations of fetal eclampsia. The writer wishes to add four others of his own:

*Case I.*—A young woman, single, eighteen years of age, had been suffering from amenorrhea, headaches, and a general feeling of malaise for several months, for which she had received large doses of iron. After returning home from a shopping tour she was suddenly seized with convulsions for which she was energetically treated for several hours on the assumption that they were of uremic origin, until the observation of the enlargement of the abdomen disclosed the fact that she was about seven months' pregnant. The cervix was undilated, and inasmuch as the patient's condition was somewhat improved, it was decided to rupture the membranes and wait until the cervix was sufficiently softened and dilated to perform extraction without injury to the maternal soft parts. A seven months' fetus was extracted the next day, which, although one or two repirations were noted during the extraction, was born dead.

The autopsy of the child, performed by Dr. James Ewing, showed the following: Body of a fairly well-developed seven-months' fetus; lungs collapsed; do not crepitate; heart normal. Liver of normal size, consistency moderately reduced. Glisson's capsule along anterior edge is stripped up by a fresh blood clot over an area 1½ cm. in circumference. Surface and cut section show uniform and intense congestion. Peritoneal cavity contains about 2 c.c. of clotted blood. Kidneys are both intensely congested; capsule and perirenal fat infiltrated with blood. Cortex shows minute hemorrhages. Both adrenals infiltrated with blood. Spleen normal.

*Histology.*—Liver. The liver cells show intense granular and hydropic degeneration, the cells consisting only of a shrunken nucleus, cell membrane and a few coarse cytoplasmic granules. There is little fat in the cells. Near the large hemorrhage the liver cells are destroyed by extravasated blood. There is no trace of bile in the liver cells or bile radicles, and no thrombi were found.

*Kidneys.*—There are numerous focal hemorrhages in the cortex and medulla, and marked general congestion. The cortical tubule cells show advanced granular degeneration. The other viscera show considerable congestion but no other noteworthy changes.

*Case II.*—Aged thirty-three years. VI-para. Previous history negative. Had been perfectly well during the pregnancy up to the day of her admission to the hospital. She stated that because of some contagious disease in the tenement where she lived she was obliged to walk the streets for three hours during the evening, becoming thoroughly chilled, and that when she found shelter and food, she overate, and in a few hours was seized with convulsions and brought to the hospital. Upon admission there was deep coma. General edema present. Marked urinary changes, but no leucin or tyrosin. After an intravenous infusion of 1,200 c.c. of salt solution, a modified Champetier de Ribes balloon was introduced into the cervix and saline irrigations of the colon were given for one-half hour every two hours. Uterine contractions began almost immediately and in six hours a seven months' fetus was normally delivered. The mother made an uneventful recovery. The child lived three days and had no convulsions.

Examination of the child's organs by Dr. Martha Wollstein showed the following: Lungs, pancreas, lymph-nodes and suprarenal capsules were markedly congested. *Liver.*—Its whole appearance is that of a fetal liver in which the lobules are indistinctly outlined. The intralobular capillaries between the columns of liver cells are distended with blood, and small hemorrhages have occurred, causing distortion of the columns with isolation of individual cells, which are nar-

rower than normal from compression. The interlobular septa are edematous and the veins are congested. The arteries are empty and the bile ducts are normal. There are no areas of necroses. Kidneys show marked congestion and in the intermediary layer there are some small hemorrhages.

*Case III.*—Aged thirty years. II-para. No previous history. Had had no convulsions for twenty-four hours before admission to the hospital. General edema; deep coma; urine contained large amount of albumin, casts and considerable blood. The pulse was 90, but of poor quality. Head upon the perineum. A seven months' dead fetus was rapidly extracted with the forceps. An intravenous infusion of 1,000 c.c. salt solution was given immediately, but before its completion an abortive convulsion occurred with marked cyanosis and the patient died. Post-mortem examination of the maternal and fetal organs, made by Dr. Martha Wollstein, showed the following: *Maternal.*—Heart muscle normal. Spleen intensely congested.

*Uterus.*—Placental tissue in the inner surface, syncytial cells being contained in the blood-vessels between the muscle cells just beneath the submucosa. These cells are in columns of 3 to 5 and do not fill any vessel. *Liver.*—Its cells show very marked granular degeneration, more so in some lobules than in others. Fatty degeneration has only just begun in some of the cells. The interlobular branches of the portal vein and the hepatic artery contain blood but are not distended. The intralobular capillaries are irregularly distended, causing pressure atrophy of many liver cells. The central veins are congested and the lobules are indistinct, several distended blood-vessels making up the center of the lobule. Hemorrhages have not generally occurred. Many leucocytes are collected within the congested vessels and there are a few outside. In some cases the entire lobule consists of dilated blood-vessels with very few liver cells left. Many lobules retain their normal conformation. When small hemorrhages have occurred, the liver cells at the periphery of the lobules show a marked hyaline degeneration, and the blood lies between the capillary walls and the liver cells. Fibrin thrombi are numerous and there is loose fibrin in the capillaries.

*Fetal organs.—Liver.*—Its cells have undergone a granular degeneration of the cytoplasm, amounting in some instances to complete necrosis; in others the nuclei remain intact and the cells have a transparent appearance. The capillaries and interlobular blood-vessels are congested. Small hemorrhages have occurred at the periphery of some lobules, by which the blood-cells are lying in and upon the liver cells, but have caused no pressure atrophy. *Kidneys.*—Degeneration in the epithelium of the tubules is very marked.

*Case IV.*—Aged twenty-five years. II-para. During the later months of the previous pregnancy, the patient had headache and trouble with her eyesight, which did not disappear until four weeks after the labor. Since then she has had no symptoms until about the sixth month of her present pregnancy, when headache and slight trouble with her eyes occurred and she noted edema of the face and legs. Upon admission to the hospital the edema was marked, especially about the face. The urine contained considerable albumin and casts; 11 grams of urea were passed in twenty-four hours. No leucin or tyrosin. Examination of the eyes showed a well-marked optic nerve atrophy, which was evidently the result of the previous pregnancy. Numerous hemorrhagic spots were noted in different parts of the body, appearing like bruises, and were possibly from that cause. In spite of rest in bed, fluid diet, and colonic irrigations, the symptoms, although improving slightly at first, became more marked in ten days, so that labor was induced by means of the modified Champetier de Ribes balloon, and a 6½ months' fetus was delivered, which lived twelve hours. The edema of the mother persisted for several days after delivery, but gradually subsided and she made a rapid recovery, although albumin and casts were still present in the urine at the time of discharge.

The post-mortem examination of the fetal organs, made by Dr. Martha Wollstein, showed the following: Edema of the hands and feet were present. Thymus gland contained many hemorrhages, the blood lying between the small sound cells, and in one instance filling about one-third of the lobule. Stomach showed congestion of the capillaries between the glands, and small hemorrhages were present upon the surface. *Spleen.*—Intense congestion and small hemorrhages into the pulp. *Liver.*—No hemorrhages were present, but there was marked congestion and hyaline masses were seen in some of the smaller blood vessels. The cytoplasm of the liver cells was granular with normal nuclei. There were no peripheral areas of necrosis, but columns of cells in many lobules were almost destroyed, having only a fringe of cytoplasm around the nucleus. *Kidneys.*—Showed intense congestion, and a few small hemorrhages were present between the tubules and into Bowman's capsule.

A comparative study of these lesions in the fetus must certainly establish their identity with those now recognized as associated with the effects of the eclamptic poison in the mother, as well as with those of other poisons. No uniform variation from the maternal lesions can be recognized in their distribution, although possibly they may be considered in general to be less intense than those in the mother. Marked congestion and hemorrhages may be more uniformly present in the fetus, but no more than is seen in some individual examples in the mother. Destruction and necrosis of the cells is, however, not so uniformly present, but Dienst's last case and the writer's first offer evidence of an ad-

vanced stage of the process in the case of the cells of the liver.

The prognosis for the fetus seems to depend, as Dienst says, more upon the length of time that the disease has existed than upon its intensity. The earlier in pregnancy, then, that disease begins, the less chance has the fetus for ultimate survival. In cases of short duration and severe intensity, although signs of asphyxia may be present, the child is frequently born alive. In cases of long duration, although comparatively mild for the mother, fetal death is more apt to occur, or if born alive, the child is apt subsequently to develop eclampsia and die, presenting at the autopsy changes in the organs, as in Case IV of the writer's, that would be considered severe in the mother.

The finding of leucin in the infantile urine of one of Dienst's cases is unique in the literature, and offers hope that a more uniform search for it in the maternal urine will furnish some guide to the clinician in the treatment of this important disease. It was absent in all of the cases reported by the writer, but in four other cases that had symptoms of a moderately severe toxemia without convulsions, it was found to be present. Dienst's opinion that it is evidence of an advanced pathological condition of the liver may or may not be true, as we have not any exact knowledge of how severe a lesion is compatible with recovery.

The fetus as an etiological factor in the disease has its advocates. The first suggestion that eclampsia may be of fetal origin is generally accredited to Fehling, in 1899, although Mouton writing in 1902 of the history of the fetal theory, says that Van der Höven first mentioned it in 1896. Christiani calls attention to the fact that Kollmann in 1896 first attempted to produce experimental evidence.

It is Dienst, however, who has most enthusiastically accepted this theory and from him we obtain fullest details regarding its occurrence.

The more frequent appearance of eclampsia in the latter months of pregnancy, its frequent occurrence in twin pregnancies, and the cessation of the symptoms after the death of the fetus, or its delivery, furnish evidence, he thinks, as to its fetal origin. He cites as further evidence a case of Kreutzmann, in which an eclamptic seizure occurred in a child thirty-six hours after labor, whose mother had had no convulsions. He also refers to Chamberlent who found the blood of a fetus more toxic than that of the mother. Dienst's interpretation of the fetal theory is that because of the disproportionate growth of the fetus at the end of the pregnancy some retrograde products of albuminous metabolism are found, which can only be transmitted to the mother through the placenta, as the fetal kidneys do not functionate.

These fetal poisons, even if they are small in quantity, are harmful to the maternal organism because they are delivered directly into the general circulation. If the elimination of these poisons is diminished by any insufficiency of the heart, liver or kidneys, they are retained, causing a degeneration and greater insufficiency of these organs, on account of which the liver is unable to complete its metabolism, and thus more toxicity will result. These poisons form a globulin in the blood and an increased formation of a ferment, which hastens the clotting of blood, causing thromboses and some of the necroses.

He does not think there can be any overproduction of poison in the child at the beginning of the disease, otherwise they would all die. While, then, he accepts the fetal origin of the disease, he considers the lesions in the fetal organs to be secondary to the poisons as developed and transmitted by the mother. As a certain time must elapse before the poisons become harmful to the fetus, it may happen in a very acute and severe form of the disease that the changes in the organs are very slight, analogous to the relatively slight changes that are found in the severest forms of peritoneal sepsis.

It may be said of this theory that fetal metabolism is probably a factor in the evolution of the disease in some cases, but the occasional occurrence of the gravest forms at a very early period of pregnancy would seem to make the possibility of the fetus as its origin incredible.

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## WHAT ADVICE SHOULD BE GIVEN TO WOMEN WITH MALPOSITIONS OF THE UTERUS?

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THE frequency with which the above question arises, and the wide variance of opinion existing among specialists, as well as general practitioners, regarding the importance of uterine displacements, leads me to believe that a brief consideration of some of the more important aspects of this only too frequent condition will not prove lacking in interest.

The fact, long recognized, that in individual cases the previously normal uterus can lie in a retroposed position, without in any way disturbing the general balance of health, has led many to underestimate the significance of this condition as a causative factor of disease in a large, and unfortunately increasing, number of women. As a result many are dragging along through a tedious existence of ill health bordering on the verge of chronic invalidism, unfitted and unable properly to perform their social and marital duties, denied the saving and priceless boon of maternity, a burden to themselves, a disappointment to their family and friends and a sore trial to the poor martyred husband, whom the physician alone can understand. Truly a most pitiful social unit, deserving of our deepest sympathy and best endeavors in her behalf!

All cases of malpositions may be divided into two classes, the congenital and the acquired. As it is in the first that the most difficulty in advising is encountered, we will reserve it for a fuller consideration later.

The most marked, as well as the most serious, example of the acquired class is that of inversion, either partial or complete, and the indications for an immediate reduction so pronounced, that little time need be spent regarding the advice to be given the patient, save that the earlier appropriate measures for its relief are instituted, the greater will be the chance of obtaining a near approximation to the normal.

Of frequent occurrence is procidentia, also either partial or complete. Here there exists a hernia, not only of the uterus, bladder and appendages, but often of the omentum and small intestines as well, which, when allowed to persist, frequently gives rise to disease in widely removed structures, as a pyelitis or even a pyonephrosis by ascending infection from a chronic cystitis originating in the displaced bladder. As procidentia is progressive, usually proceeding from bad to worse, and the difficulty of effecting a cure increasing in direct proportion to the length of time it is allowed to develop, an early operation is attended with less danger and uncertainty of result, and the patient should be so advised, even though in the beginning her symptoms be slight.

The next acquired form probably most frequently encountered is the retroversion, or retroflexion occurring after a full term delivery, or miscarriage in the latter months of pregnancy, where a prompt replacement before adhesions have formed with the insertion and two to three months' use of a suitable pessary until the uterus and its ligaments have properly involuted is, as a rule, all that will be necessary. It is in these cases that the pessary has its greatest value, the retrodisplacement being readily corrected, and the necessity for an operation later thus avoided In the cases of adherent retropositions, accompanying disease of the appendages is the rule to which there are few exceptions, and any efforts toward replacing the uterus without proper treatment of the appendages should not be attempted. Here, however, effect is frequently mistaken for cause, and much time wasted in attempting to obtain an anatomical cure, which, however successful, will not result in a symptomatic one.

Hernia of the uterus through the abdominal wall, either at the medium line, or at the external ring, is of rare occurrence and usually calls for operative measures.

The lateral displacements are generally the result of disease in the adnexa, for which appropriate treatment should be instituted.

Anteflexion, so long considered a malposition, is now no longer regarded as such, but is due to a lack of development and does not concern us here, so that a passing mention will suffice.

This brings us to the congenital type, the varying clinical importance of which is so often underestimated. Caused by an error in embryonal development they are recognized by a short anterior vaginal wall, a long, thin cervix lying parallel to the axis of the vagina and close up under the symphysis pubis, and a small retroflexed, more often retroverted, fundus. Though generally free from adhesions they are not replaceable on account of the short anterior vaginal wall, that does not admit of the cervix swinging back into the hollow of the sacrum as the fundus is brought forward. A small proportion of these patients are free from physical symptoms and usually consult us for sterility.

What advice, then, should be given to women with these various malpositions? Let us consider for a moment the symptoms usually complained of. A sense of pelvic discomfort with more or less pain in the pelvis, back and the lower abdomen and thighs, aggravated by exertion, and worse at the menstrual period, accompanied by a more or less constant leucorrhea, progressive nervous manifestations and sterility, or the occurrence of frequent abortions in the early months of pregnancy, several, or many of which may be present in any one case. What degree of success can we reasonably hope to attain by the operative treatment of these symptoms? Some of them are very often the result of other pathological conditions not directly connected with the uterus, as the sense of pelvic discomfort complained of where the support of the pelvic diaphragm is lost as a result of exten-

sive lacerations, or even widely removed from it, as backaches consequent upon a displaced kidney. In the first instance repair of the perineum may accomplish a cure, but in the second any operation on the perineum or uterus would prove futile. The leucorrhea is seldom cured by operation and generally only yields to a more or less prolonged treatment by the application of caustics directly to the interior of the uterus and cervical canal.

Starting with the dictum that no case should be subjected to operative treatment merely to effect an anatomical cure, relieves us of a lenghty consideration of the uncomplicated retrodisplacements causing no physical symptoms. These in married women should be replaced and a cure attempted by the use of the pessary but should be a *noli me tangere* in the virgin.

In the adherent cases the result, as a rule, of pelvic peritonitis primarily involving the tubes and ovaries there will generally be found a marked train of symptoms increasing in severity, as the condition is a progressive one. Here operative treatment should be advised, though the occupation of the patient should be carefully considered before reaching a decision. Women of the leisure class who are not called upon to put forth any great or continuous physical exertion may be oftentimes readily relieved of their symptoms by office treatment, whereas women whose lives are more laborious, requiring them to be more or less constantly on their feet, receive little or no benefit from such means.

When the retrodisplacement is a congenital one the symptoms are not infrequently due to a lack of development in the pelvic organs rather than to the displacement *per se*, so that its operative correction is not always followed by a cure, although the symptoms may be much relieved, and if the patient is not too advanced in years, restoration to a normal position often results in a favorable further development. These cases being an error in development are seldom free from symptoms, and would in all probability derive the greatest benefit from an operation performed soon after puberty, but they do not generally come to our attention until later years when progressive suffering, or several years of unfruitful married life, leads them to seek the cause.

The most important symptom, from a social standpoint, and one for which we are so often consulted, is that of sterility, absolute or relative, and it is here that the greatest difficulty is at times encountered in deciding on what advice to be given the patient.

That the retroposed uterus, when not an absolute hindrance, can offer extreme difficulty to conception is true, and especially so in those cases where the cervix points forward toward the anterior vaginal wall. Here the mechanical obstruction to the entrance of the spermatozoa alone suggests an important causative element, and the accompanying state of venous congestion in the uterus offers a particularly unfavorable soil for the cultivation of a fertilized ovum. When conception does take place, abortion during the early months is of frequent occurrence, and this is especially true of those cases complicated by peritoneal adhesions, often so firm as to limit the excursion of the pregnant uterus to the pelvis, thus bringing on an early abortion by the inability of the uterus to enlarge sufficiently for the accommodation of its growing fruit. Where there are repeated abortions in the early months of pregnancy this condition will very often be found to be the cause, and an examination of the pelvic organs before the end of the second month is of extreme importance.

When the retroposed gravid uterus is uncomplicated by adhesions it should be replaced, and a retaining pessary worn until the fundus is well up out of the pelvis, and all danger of incarceration past. Where complicating adhesions make this impossible their operative separation with correction of the displacement should be advised as the only treatment consistent with good surgery and good morals; the interruption of the gestation by emptying the uterus, so often practised, is open to severe censure and need only be mentioned to be condemned.

When the retroposed pregnant uterus does not abort in the first few months—but continues to enlarge until the abnormally situated fundus becomes incarcerated under the promontory of the sacrum its immediate release should be accomplished, for the condition is a serious one which, when allowed to persist, always results in the death of the fetus and is often attended by disastrous results to the patient; vesical complications, especially gangrenous or membranous cystitis leading to death are of not uncommon occurrence.

The conclusions that I wish to draw then, from this necessarily limited consideration of the subject, may be summarized as follows:

I would divide all malpositions of the uterus into three classes: Operative, non-operative and questionable.

The operative class may be further divided into those requiring immediate attention, and those in which it is safe to await for a reasonable time the convenience of the patient. Under the first subdivision come those cases which may be classed as emergency ones, namely—inversion, incarceration and irreducable prolapse of the gravid uterus, and adherent gravid retrodisplacements with symptoms of threatened abortion. In the second subdivision are the complicated retrodisplacements, and hernia of the uterus either through the vagina or through the abdominal wall. In the non-operative class I would include the uncomplicated retrodisplacements, and reducible hernia of the gravid uterus.

The questionable class embraces the congenital type of cases, and retrodisplacements with

symptoms relieved by reduction, but where the use of a proper pessary fails to accomplish an anatomical cure, or in young virgins where its use is unjustifiable. The congenital cases being errors in development are each a law unto themselves, and require a most thorough investigation.

Where the retrodisplacement is the only abnormality present, the patient is often greatly benefited by an early operation, but where other marked evidences of maldevelopment exist the prognosis is unfavorable.

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## CARBOLIC ACID GANGRENE.

BY JUSTIN HEROLD, A.M. M.D.,
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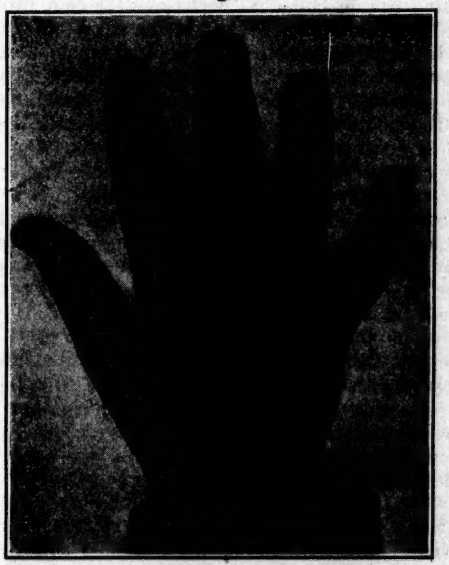
THE peculiar integumental changes which occasionally manifest themselves in certain cases after exposure to the action, externally, of even mildly diluted solutions of carbolic acid, have prompted many surgeons to discard its use in surgical practice, excepting for the immersion of instruments which, as is known, are tarnished when placed in a solution of the bichloride of mercury. The public, and unhappily many pharmacists and practitioners of medicine, do not appreciate thoroughly the grave dangers residing in the daily and popular use of carbolic acid solutions as a routine application to open wounds and injuries of other character. Injuries to the fingers and toes, trifling in extent, to which carbolic acid in various strengths of solution is applied too freely, in some cases, have resulted in gangrene of the parts to which the acid is applied. In this connection, gangrene due to injury, calling for the use of carbolic acid, is excluded. As remote as 1871, Tillaux (*Bull. Gen. de Therap. Med.*, etc., Vol. LXXXI, p. 275) reported three cases of carbolic acid gangrene, and since that time writers in various countries have at frequent intervals reported similar cases. Theodore Billroth, some years later, in a letter published at Vienna, cautioned against the too indiscriminate use of this irritant, and said that he had at that time seen four cases in which the fingers, which had suffered a most insignificant injury, became gangrenous through the uncalled for external application of carbolic acid. These results are due to the unfortunate popularity that carbolic acid has attained in the public mind as an antiseptic for the treatment of wounds, and also to the faith which physicians and pharmacists place in its omnipotence. In the face of all this, the misuse of carbolic acid continues, and it is with the object of attracting further notice to this deplorable and indiscriminating use of a toxic agent, that the author desires to add to an already long list a case of carbolic acid gangrene which came to his notice recently.

*Case.*—Mr. George T., aged thirty years; by occupation a laborer in a coal yard; family and personal history negative. Addiction to beer-drinking to a slight extent only habit. While at work, "scraped" end of middle finger of right hand on a sharp-pointed nail, bled freely, necessitating bandaging. Consulted his physician, who ordered a two-per-cent. solution of carbolic acid, to be diluted with an equal quantity of water, and then wrapped around finger. Patient did as directed, keeping the bandage around the parts well-soaked with the solution. On removing the dressings twenty-two hours thereafter, finger was found to be discolored and shriveled as far in extent as the bandage reached, bandage was loosely applied, no constriction at any point. Case was referred to me for further treatment, in conjunction with family physician. Patient had faithfully applied the one per cent. solution of carbolic acid, to parts as far as the solution of integument can be noted in the accompanying illustrations. Urinary examination showed absolutely normal constituents; no sugar, no albumin, no casts, sp. gr., 1.018; quantity in forty-eight hours, 44 ounces. With the assistance of the family physician, amputation at the middle of the first phalanx was performed, under ether. The anteroposterior flaps united perfectly in ten days. Illustrations show perfectly the extent of the gangrene, on palmar and dorsal surfaces of finger.

Francis B. Harrington, visiting surgeon to the Massachusetts General Hospital, in an excellent article published in the *American Journal of the Medical Sciences* for July, 1900, reviews the entire subject of carbolic acid gangrene as presented up to that date, and adds 18 cases, which he has discovered or seen through others at the Massachusetts General Hospital, to 114 cases, the reports of which he found in the medical literature of various countries. He appends a list of bibliography on the subject covering sixty monographs appearing in the literature up to that date. Since the publication of Harrington's paper, many isolated cases have been reported by Lucas-Championniere, Bindi, Romeick, Vertner Kenerson, E. Dunster Kremers and George E. Shoemaker. There are, however, many cases which are not recognized as carbolic acid gangrene, and these, with many recognized cases, are never reported. The lenient restrictions governing the selling of carbolic acid, in retail or bulk (in great part, corrected by recent legislation), the ambiguous instructions as to its proper employment, and the ignorance on the part of the public in general as to the dangers lurking in its indiscreet use, are responsible for the seemingly too frequent occurrence of carbolic acid gangrene. The external application of carbolic acid has also produced severe constitutional disturbances and has even destroyed life. This is due to the fact that carbolic acid possesses real penetrating power, a fact evidenced by the numerous cases of constitutional poisoning reported at various times. The continual use of the solution may and does give rise to headache, vertigo, fainting, vomiting, ir-

regular breathing, and a thready pulse.[1] One of the first symptoms of carbolic acid poisoning is the characteristic olive-green coloring of the urine, when the acid is applied externally, later the urine may respond to the albumin tests, and carbolic acid be even recovered from the same by analysis. In severe cases there are bloody diarrhea, hemoglobinuria, suppression of urine, contracted pupils, clonic muscular spasms, and collapse leading to a fatal termination. Individual disposition probably plays a part. Infants and young children are especially susceptible to the toxic action of the drug. Very distressing and alarming constitutional symptoms, and even death, have followed the application of a mild solution to minor wounds, such as the wound of circumcision. It is foreign to the purpose of this article to take up this phase of

Fig. 1.



Carbolic acid gangrene. Dorsal surface of finger.

the subject, but we shall review the question of disturbances as a result of the local action of carbolic acid, *i.e.*, mortification or gangrene.

Experiments have proven that the use of the full strength of the acid is not necessary to produce gangrene. Indeed, Joseph Levai (*Pest. med. chir. Presse*, Budap., 1897; *Ungar. med. Presse*, Budap. 1897, has shown that strong carbolic acid is less dangerous, for it forms a scab which restricts penetration of the irritant drug into the deeper tissues. When applied to the skin, the superficial layer of tissue is coagulated and thus absorption of the drug is prevented. It produces great local anesthesia, extending inward for some depth, to the tissues with which the acid has not come in contact. This superficial slough is cast off, and thus complete mortification is less likely to occur under these circumstances than when dilute solutions of the acid are employed. As Harrington says, the result depends on the strength of the solution, the manner of application, the length of time of application and the power of resistance of the individual. However, it is probable that the strength of the solution has less do do with the unfortunate result than the length of time of the application and the thickness of the epidermis. It is worthy of comment that in Harrington's cases women made up four-fifths of the total number. It is needless to state that mortification does not always follow the use of carbolic acid solution as a wet dressing.

The local toxic effect of carbolic acid has been studied in a very exact manner by a number of writers, among them, Prudden, Körtum, Frankenburger, Lucas-Championniere, Levai and Housel. Prudden (*Am. Jour. Med. Sciences*, January 1881) "observed under the microscope the effect upon living leucocytes and ciliated cells, of soakage in varying solutions of carbolic acid. Under soakage in solutions between $^1/_{25}$ per cent. and ¼ per cent. strengths, ameboid and ciliary movements slow up, or stop, but resume activity upon withdrawal of the carbolic fluid and its replacement by a normal one. Under soakage in solutions of one to five per cent., however, the bodies under observation speedily lose their power of movement, without possibility of resumption, and their protoplasm soon suffers disintegration. Applied to the human skin, comparatively weak solutions, such as one to two per cent. solution used in surgery, objectively cause a whitening and shriveling of the cuticle, and subjectively a conjoint numbness and prickly sensation, followed, if the application be prolonged beyond a few minutes, by smarting. These painful sensations Squibb declares to be aggravated by elevating, and alleviated by depressing the affected part,—phenomena contrary to those which usually obtain under circumstances of painful irritation. After withdrawal of the application the skin gradually assumes its normal appearance and tactile sensibility, recovery from the numbness, however, being slower than the return to natural appearance. Touched with the undiluted acid, the skin immediately whitens, while the circumjacent parts redden by irritation. Sharp pain, passing over into numbness, is experienced, the pain gradually subsiding after an hour's lapse, and the surface presenting the dry, scaly exudation so often seen on surgeons' hands in the days when operating under a carbolized spray was in vogue" (Reference Handb. of the Med. Sc., Vol. II).

Körtum (*Intern. klin. Rundschau*, No. 52, 1888) attempts to explain the gangrene resulting from the continuous application of carbolic acid solution on the ground, first, that carbolic acid has a toxic effect on the nerves, and secondly, that a watery solution of the acid is easily absorbed by the tissues, and then exerts its familiar property of coagulating albumin. The

1 Herold's Legal Medicine, J. B. Lippincott Co.

chemical first irritates, then paralyzes the vasomotor nerves, and it may exercise the same effect on the sensitive and trophic nerves, for there is at first, upon applying the acid, an acute smarting and burning sensation, followed later by anesthesia. He believes that it is very probable that the trophic nerve disturbances play an important part in the production of gangrene. As has already been stated, watery solutions of the acid are easily absorbed and penetrate deeply into the tissues. The property of coagulation of albumin by the acid also plays a part in the causation of mortification. Under favorable circumstances there is a paralysis of the vasomotor nerves, and a consequent slowing of the blood current.

Frankenburger's (quoted by Harrington) explanation is worthy of consideration. In 1890, he conducted a number of experiments upon

Fig. 2.

Carbolic acid gangrene. Palmar surface of finger.

animals, and proved that dilute carbolic acid solutions would produce complete destruction of the parts to which they were applied. The subcutaneous tissue showed considerable transudation. From these studies, he concluded that the chemical acted directly upon the red and white blood corpuscles, causing stasis and thrombosis. This in turn prevents nutrition and thus produces death of the part. He believed that the local effect upon the nerves was of minor consideration.

Levai (*Gyo-gyssat.*, Budap., 1897, Vol. XXXVII, pp. 75 to 94; *Pest. med. chir. Presse*, Budap., 1897, Vol. XXXIII, pp. 177 to 183; *Ungar. med. Presse*, Budap., 1897, Vol. II, p. 172) doubts the conclusions of Körtum and of Frankenburger. His experiments make it seem probable that the action of carbolic acid is not a specific one, but is analogous to that produced by 5 per cent. solutions of hydrochloric, nitric, sulphuric and acetic acids and of caustic potash when applied to a part by means of a saturated compress for about twenty-four hours. He showed by histological examination that in the beginning, each of the above chemicals properly diluted and applied in the form of moistened compresses, produces the same effect; the epithelial layer becomes edematous and loosened. "As soon as a way has been made to the deeper layers, each agent produces in a different way the same result, namely necrosis of the living tissue." This mortification takes place in layers downward, and exercises its effect not only on the nerves and vessels, but involves all the tissues of the watery solution on the skin causes its ultimate maceration, and thus penetration of the chemical becomes easy and rapid.

Championniere says that in the cases observed by him the damage usually took place in localities where the circulation has always been feeble. He attributes the destruction to the toxic effect of the acid on the cutaneous nerves causing a trophoneurosis,—an impaired nutrition due to defective nerve influence.

As has already been stated, clinical observations prove that it is the mild solutions of carbolic acid which are the more dangerous, since they cause no pain and in consequence their effect is a decidedly more insidious one. Peraire (*Jour. d'Anat. de Paris*, February 5, 1896) records an instance in which a child ten years of age lost the second and third joints of a finger after twenty-four hours of exposures to a compress saturated with a one per cent. solution of carbolic acid. Levai reports a case where gangrene followed the application of a two per cent. solution for twelve hours. In some cases, mortification has resulted in three or four hours where the solution was in a more concentrated form. Thus Körtum (*Inter. klin. Rundschau*, No. 52, 1888) records such an instance in which the last phalanx of the thumb was destroyed after a single application of an eight per cent. solution. He reports other cases where one or two per cent. solutions produced gangrene, and further speaks of an interesting case where multiple spots of gangrene appeared in the hand after the application of compresses moistened with a two per cent. solution of carbolic acid and applied for several hours. Vertner Kenerson (*New York and Phila. Med. Jour.*, February 4, 1905) reports a case where the solution, at first, was 1 in 50, and then later changed to 1 in 100. In this instance, the wet dressing was covered with oil silk. A patient was ordered to apply a two per cent. solution of carbolic acid for four hours for the purpose of aborting a felon, and was instructed to remove the dressing as soon as the skin was blanched. About five hours later, the finger was reported as blanched, but "pricking stone." Orders were then given to

reduce the strength of the solution to 1 to 100, *i.e.*, one per cent. About this time a friend of the patient suggested covering the wet dressing with oil silk, which was done without consulting the physician. The application was left *in situ* over night. The following day parts of the finger were dusky, and while attempts were made to care for return circulation by placing the finger in a warm poultice (to some extent, it did improve in the proximal joint), dry gangrene followed and it became necessary to amputate at the tip of the first phalangeal bone. Kenerson concludes his report by saying: "Carbolic acid is the best penetrating disinfectant in those infections that do not proceed from an open wound, as it has real penetrating power through unbroken skin, but it should never be covered with any material that will prevent evaporation, and should be applied only with a light dressing."

E. Dunster Kremers (*Jour. Am. Med. Ass'n*, August 27, 1904), Lucas-Championniere (*Rev. gen. de clin. et de therap.*, Paris, 1903), F. Bindi (*Clin. med.*, Pisa, 1903, IX, pp. 103 to 105), Romeick (*Zeitschr. f. med. Beamte*, Berl., 1903, XVI, p. 124), George E. Shoemaker (*Am. Med.*, July 9, 1904), Du Castil and Nocton, "Gangrène du mamelon d'origin probablement phèniquée." *Bull. Soc. franc. de dermat. et syph.*, Paris, 1904, XV, 28, are among those who reported cases since the publication of Harrington's paper. The records of all these cases are so much alike that a detailed report of each would be a needless repetition.

Experiment has shown that the gangrene is not due to tight bandaging or to compression, but simply to the action of the carbolic acid. Tight bandaging undoubtedly encourages the tendency to this retrograde process, but clinical experiences have shown that the gangrene does not develop primarily from this cause. The gangrene is limited to the tissue enveloped by the moist compress, and is determined by a sharp line of demarcation, as is shown in the illustrations accompanying this article. This has been demonstrated by a case of Levai, where the last phalanx of a finger, which was not covered by the dressing, escaped the gangrenous process and presented a normal appearance and bled when pricked with a pin; the finger nearer the trunk was quite black and without sensation.

In cases of carbolic acid gangrene, the history, as a rule, is as follows: The patient usually comes for treatment with the history of having treated a cut, bruise or a felon with a solution of carbolic acid or with an ointment containing small quantities of the drug. It is reasonable to assume that solutions of carbolic acid usually are no stronger than five per cent., since water, which is the usual solvent, will practically only dissolve about five per cent.[1] Hence, most cases of gangrene due to this acid, result from the application of solutions varying in strength from one to five per cent. (one per cent. in my case, here quoted). The story reveals the unfortunate error of many druggists, when selling the acid without a physician's prescription, in not sufficiently cautioning the customer regarding the danger of the continuous application of the drug. It may be a physician, unhappily, who is found culpably derelict in his duty in a matter of this kind.

Carbolic acid, either in the form of a dilute solution or of an ointment, is the agent that occurs to the mind of most people as the proper remedy for use as an antiseptic. This, and the want of knowledge as to its judicious use, is the reason for the frequent occurrence of carbolic acid gangrene. Upon examining the affected member it will be found dead black in color, somewhat shrunken, devoid of sensation and dry. A sharp line of demarcation is established, and there is no odor. Hopeless disorganization is readily recognized, and the only therapeutical measures at our disposal are amputation or disarticulation. An alcoholic dressing may be tried, with the hope that it may destroy any carbolic acid remaining in the surrounding partially dead tissue. It might be beneficial to apply a dressing saturated with lime water, if the case is seen soon after the removal of the carbolic acid.

*Prophylaxis.*—Lucas-Championnière advises the use of glycerin in combination with carbolic acid rather than the usual aqueous or alcoholic solutions. The best prophylactic consists in the avoidance of the use of this chemical for wounds, and to resort, in its stead, to some of the many other excellent drugs for this purpose. The very best, according to the *International Journal of Surgery*, is a lotion known under the name of Burow's solution, which is easily prepared by dissolving 28 grains of lead acetate crystals in water, pouring this solution into a vessel containing a solution of 70 grains of alum, and then diluting up to 800 grams. The resulting precipitate of lead sulphate must be thoroughly filtered out. This may be further diluted when required for moist compresses, the latter being well covered with rubber tissue or oil silk to prevent evaporation. "Although such unfortunate results (referring to Dr. Harrington's paper in *Am. Jour. Med. Sciences*, Vol. CXX, p. 1) from the external application of carbolic acid have been known for many years past, it needed just such awakening as this paper furnished to call attention to the results of too recklessly using this valuable agent. It is well known, however, that gangrene does not invariably follow from such applications, but this fact shall not deter those who have occasion to recommend or actually make use of such solutions from advising caution, and especially to keep it out of the reach of children. The general consideration which has been given to this subject has developed the fact that many surgeons cannot quite agree with Dr. Harrington's general advice to use the other substitutes for wet dress-

1 Herold's Legal Medicine, J. B. Lippincott Co.

ings, for the beneficial results have been marked in too many cases with carbolic acid solution. They would rather call for more care in its use."

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## THE MEDICAL PROFESSION IN ITS RELATION TO THE ELIMINATION OF COMMUNICABLE DISEASES.[1]

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EVERY thought has a literal value. In the degree that thought is focussed and given direction is it effective in the work it is sent out to accomplish. We should not fail to realize that however small our contribution, its impulse may be felt far and near.

Those of us who, from year to year are honored, through this high office, in being chosen to speak to our fellow practitioners, must be regarded mainly as torch-bearers, receiving light from those whose torches have burned brightly, and placing a still larger flame in the hands of our successors. Every act of a physician's life inscribes itself in the memory of his fellows. He must be a light to illume, to be prepared to scatter sunshine where clouds and shadows reign.

The conscientious physician is attached to just principles and governed by the highest motives in doing good. His work is never ending, and his patience inexhaustible. Moreover, he owes allegiance primarily to the general welfare of the community and to moral and intellectual convictions. It is heredity to devote whatever talents may be his to safeguarding the public health and to advance the best interests of his profession. To learn the truth with him is to proclaim it. To this spirit of self-sacrifice and scientific zeal devoted to humanity there is no parallel.

There is a spirit of inquiry, a thirst for knowledge, pervading our profession, and speculation is displaced by fact. One of the most important elements of success in life, and even of happiness, is a trained habit of observation; the power of accurately noting and comparing. Invaluable discoveries have been made by simply observing and reflecting on what was going on under one's eyes. Observation and research are prime factors in the wonderful advance and revolutionary changes constantly going on. Theories advanced by one are overthrown by another unless they stand the crucial test of successful repetition. As science is so abundantly demonstrating to-day, the things which we see are but a small fraction of the things that are. The real vital forces at work in the world about us are not seen by the ordinary physical eye.

There are two classes of workers in the profession of medicine,—those engaged in the discovery and those engaged in the practical application of scientific truths. Both of these realize the immensity of the field, the danger of propagating error, the gradual development and practical application of medical knowledge, and the agony of an argument with ignorance, prejudice and superstition.

Prophylaxis, the science of the preservation of health or the prevention of disease, is based upon our knowledge of the causation of disease. To prevent the latter, one must first grasp somewhat of its nature and origin. What has been accomplished in this direction within the past quarter of a century far transcends the wildest speculation of the theorist of but half a century ago. During this period, medical science has turned empiric chaos into scientific order. A complete revolution has been brought about through bacteriology, and renewed zeal has been awakened in various directions to curtail or prevent disease and thus tend to increase the average duration of life.

To acquaint laymen with the aims and possibilities of the medical profession in relation to preventive and sanitary measures is a problem of gradual solution. There is a natural conservatism possessing the human mind, which makes it slow to grasp the import of revolutionary facts. Until the public is educated through us to understand its importance and possibilities, and necessary laws enacted and enforced, preventive medicine will never be accorded its proper place as a scientific branch of medicine. The slow working of natural laws tends to bring about reforms in all things, but it should be the accepted duty of every intelligent citizen to endeavor to assist in educating the masses. The public as well as our patients should be taught the nature of infection and contagion as applied to various diseases, and they should be persuaded to observe ordinary sanitary precautions. Where the will fails the law should step in.

Any measure which will preserve the resisting power of the individual against disease is essentially based upon as sound a principle of prevention as that which, for the same reason, endeavors to keep disease away from the individual by preventing him coming in contact with cases of that particular affection. Even the seeming miracles of modern surgery are due as much to the knowledge of the means by which inflammation and suppuration may be prevented as to the skill of the operator.

Disease expresses the reaction of the organism, not the action of the germ; the germ is no more important than the tissue it invades. Whatever the character or proportion of infective or contagious diseases existing, the danger in a community is directly proportional to the number of cases existing. The more perfect the intimacy the greater the risk, the more frequent the infection. There is at present a strong belief that most epidemics of the various infective diseases are spread by mild cases which go unrecognized, rather than by the mediation of a third party.

1 Address delivered at the thirty-second Annual Meeting of the Florida Medical Association, held at Jacksonville, April 19, 20, and 21, 1905.

We are to-day in possession of a satisfactory working theory of the nature of infective disease, and of the factors involved in natural resistance and acquired immunity. Our wonder knows no bounds regarding these, so marvelous is the precision and scope of the protective reactions, concerning which so much has been brought to light in recent years and which lend themselves well to comparative studies. In natural immunity, there exists in certain families or species an inborn resistance to certain infective germs. The reactions of natural immunity, however, may not neutralize quickly enough the toxins nor destroy promptly enough the invading organisms Hence the intervention of products of artificially produced biologic reactions. Yet methods of artificial immunization will never enable us to dispense with the observance of general and proper hygienic precautions, which increase the resistance of the tissues.

When success attended the production of specific antitoxins for diphtheria and tetanus an important step was taken in serum therapy and immunization. Yet the failures that have been met with in the attempts to produce antitoxins for other diseases have only stimulated investigators the more to a closer study of immunity and of the means by which bacteria cause disease.

The greatest medical triumphs have been won in the realm of the infinitesimal beings that, unseen, swarm and multiply within and about us. Bacteriology was born of philosophic doubt as to spontaneous generation. It has furnished a solid basis for preventive medicine, capable of conferring more and more benefits on mankind as its principles receive wider application. The spirit of research has become so diffused as to penetrate into almost every department of human knowledge and activity. With a recognition of its usefulness and its necessity as an element of progress, bacteriologic research is proving an indispensable factor in the study of those important problems in medical science so intimately associated with the health and happiness of mankind.

The laboratory has, in fact, become indispensable in the daily life of the progressive physician, technical and positive aid being thus offered us in individual and general diagnosis, through bacteriologic and chemical examination. The laboratory gives facts, and it rests with the clinician to interpret them. We have now, in this country, various institutions promoting individual research toward advancing the science of medicine; such are the United States Marine Hospital Service Laboratory, the Carnegie Institution, the Rockefeller Institute, the Memorial Institute for Infectious Diseases, and the William Pepper Laboratory of Clinical Medicine. To these may be added the Harvard University Department of Research, and the Bacteriological Laboratory of the New York City Board of Health.

No field for medical research is more promising for investigation than that of the composition and chemistry of the blood. Within the past few years much attention has been given to it, and in at least a half dozen diseases does a diagnosis rest entirely on the blood examination. In the establishment of a bacteriological laboratory, our efficient health officer and our active and enterprising State Board of Health have taken advantage of the necessities arising in connection with its sanitary work. The advantages which the laboratory holds out, moreover, to every member of the medical profession, through the generous and gratuitous privileges of the board, cannot but commend itself to every one of us. It is pleasing to note the steady growth, the influence and increasing confidence in the laboratory and its findings, and it is with commendation that I refer you to the instructive annual report of the bacteriologist, and in addition, of the State Board of Health. The physicians throughout the State, more especially those of the larger cities and towns, now generally avail themselves of the proffered opportunities tending to a positive or negative diagnosis, through bacteriologic or pathologic examination.

The perfection of bacteriological methods in relation to typhoid fever, that of cultivating the bacilli from the blood, urine and stools, and the Widal reaction,—these have made possible the induction of a positive diagnosis within the first week or ten days usually. The lightness with which gonorrhea, a disease so prevalent, so contagious and so fraught with dangers to both sexes, is viewed by the public is most singular. The idea that public interests will be furthered by a recognition of the dangers of gonorrhea, is, as yet, an unfamiliar thought to the laity. Yet it is only within recent years that they, through repeated warnings of medical men, have become aware of the perils of tuberculosis. Regarding the latter, the greatest scourge of the human race, which is tolerated and engages general sympathy, the fatal sense of the lack of need or uselessness to combat the contiguity risk still seems to dominate many families in which such disease has made its appearance. The experience tables of life insurance companies, which are the only safe and reliable guides, based on many thousands of consumptive deaths resulting in claims for insurance, show that the families tainted with tuberculosis furnish, up to the age of forty, nearly 50 per cent. more deaths than families not so tainted. Life insurance companies therefore should, in my opinion, take an active and serious interest in preventive medicine. in that they profit by every advance in medical discovery and progress. The activity of boards of health in educating the masses as regards the real character of tuberculosis, has not only brought the disease more and more under control, but has markedly decreased the death-rate, the greatest decrease being shown by New York City, as a result of active administrative control through the energetic

efforts of its enlightened board of health. There should be established in Florida, in one or more favorably situated country districts, available sanitaria, under the supervision and control of the board of health, for the care of early and incipient cases of tuberculosis. Such care not only removes the individual as a source of danger to others, but also affords the best chance for recovery.

And now a word as to schools, in relation to communicable diseases. It is undeniable that the school is a patent factor in the propagation of disease, and under many conditions found, a train of physical ills are consequent that seem to be the price the child must pay for its education. School children are of a susceptible age, and wherever a number of children are brought into close contact the dangers of dissemination of communicable diseases is materially increased. While it is impossible entirely to eliminate all diseases from the school, yet its decided mitigation is entirely within reach. A systematic daily medical examination is a demand made by the modern recognition of preventive medicine, and its full significance is becoming more widely appreciated as its results become more apparent.

The subject is one of no limited extent. Every individual, physician or layman, should take an interest in anything tending to aid in preventing sickness or in avoiding contact with another having a communicable disease. The State should realize also that health is a condition of citizenship, and protection of the health of its child population implies a better class of citizens for the future. Health officers cannot rise far above the standard of culture of those who provide the means for administering the law. By improvement of our public health service will the communities in general receive the benefits to which they are entitled by virtue of our advancing knowledge as to the origin and transmission of disease.

## MEDICAL PROGRESS.

### MEDICINE.

**Cancer of the Uterus.**—J. A. SAMPSON (*Journal A. M. A.*, May 20) takes up the subject of uterine cancer, more especially that of the cervix, with special reference to the importance of early diagnosis and treatment. It is of importance to the medical profession, first on account of its frequency, it being the most frequent primary form of the disease; second, because it occurs mostly in middle life; and third, because of the distress and suffering it produces. With an early diagnosis a large percentage of cures is possible, but on account of ignorance and neglect most operable cases pass into the incurable stage. Hence the importance of educating physicians, and through them the public, as to the curability and the diagnostic points for its early recognition. One early symptom easily recognized is bleeding, sometimes profuse, sometimes slight, but always abnormal, and therefore likely to attract attention. In the rare cases in which it is absent, other signs usually exist that should lead to the suspicion that there is something wrong and needing investigation. Few patients unoperated on live over three years after the appearance of this symptom, and the majority die within one or two years. An absolute prognosis can not always be made either before or after operation or from examination of the specimens removed. With present methods, recurrence is likely to take place in three-fourths of the cases operated on, but operation may still be useful as a palliative, relieving suffering and lengthening life. Although he reports here a case of apparent cure of recurrent cervical cancer, Sampson is doubtful as to the propriety of operation in cases of recurrence. The value of education in this matter is shown by the experience of the Johns Hopkins Hospital. There has been a steady increase of the proportion of early diagnosed and operable cases and of the percentage of cures, and this increase has been most noticeable among the educated and well-to-do women. Sampson refers to Winter's campaign of education in Prussia, by which the operability of uterine cancer was increased in East Prussia from sixty-two to seventy-four per cent. in one year. The need of a more radical operation in these cases is pointed out, especially in patients in good general condition, with a freely movable uterus apparently in the early stages of the disease. When the growth is apparently extensive and its removal difficult and the patient is in poor condition, unless a very thorough operation can be done, including even excision of the lower portion of the ureters and part of the bladder, taking in all the diseased tissue, he advises that nothing be attempted. In very extensive inoperable cases he would treat the symptoms and do as little as possible locally. The article concludes with some remarks on cancer of the fundus, in which the value of an early diagnosis is even greater than in cancer of the cervix on account of the lower operative mortality and the better prognosis as to cure.

**Experimental Fat Necrosis of the Pancreas.**—A number of experiments have been made by G. HESS (*Münch. med. Woch.*, April 4, 1905), to prove that apoplexy of the pancreas is really caused by entrance of fat into the excretory duct of the pancreas. If even small amounts of oil are injected into the pancreatic duct, the animals will die rapidly with symptoms of collapse and severe convulsions, and at autopsy the pancreas is completely or partially necrotic. If only a small quantity of oil be used, the animal may recover, since the necrotic tissue will be replaced by fibrous tissue. The necrosis is the direct result of the caustic action of the soap, which is formed by the action of the pancreatic juice upon the fat. Some further experiments were then made, to determine if fat can enter the intact papilla of Vater when there is stagnation in the duodenum. The duodenum was ligated 10 c.c. below the entrance of the duct, and the animal then fed with large doses of oil. At autopsy, the pancreas was found perfectly normal. In a second series of experiments the papilla was injured so as to enable the entrance of the fatty contents of the intestines. A glass tube was inserted, but the animal made a complete recovery, and no changes were found in the pancreas. It was only when both factors (compression of the doudenum and injury to the duct) acted together, that positive results were obtained. The animal showed extensive necrosis of the pancreas, and the entire peritoneum was the seat of many typical areas of fat necrosis. It is highly probable that many, if not most cases of so-called apoplexy of the pancreas in man, are brought about in this way; the stenosis

of the duodenum being caused by adhesions or the pressure of the stomach and the injury of the papilla by gall-stones or pancreatic stones. It is a significant fact that in many cases a history of cholelithiasis may be obtained. A moderate degree of indurative pancreatitis is rather common at autopsy and in many cases this sclerosing process may be the result of former attacks of apoplexy of very moderate degree.

**Hodgkin's Disease with but Slight Enlargement of the Superficial Lymph Glands.**—H. F. STOLL (*Med. Rec.*, May 20, 1905) says of this case that the following points seem of especial interest: (1) The development of acute symptoms associated with an eruption nearly four years after the beginning of the disease. (2) The slight involvement of the superficial glands. (3) The occurrence of periodical abdominal distention and tenderness. (4) The alternating periods of pyrexia and apyrexia. (5) The unusually severe anemia. (6) The disappearance of the glands before death. The general characteristics of the disease are discussed at length, and in regard to treatment it is stated that improvement of the nutrition by the rest cure and an abundance of fresh air is very important. Arsenic, either in Fowler's solution or as the sodium salt of cacodylic acid, should be given in relatively large doses. The glands should be exposed to the X-rays for a long period, and the earlier such treatment is begun the better will be the results. Removal of the glands is to be resorted to only when pressure symptoms are marked.

**Early Diagnosis of Pulmonary Tuberculosis.**—W. P. STUBBS (*Maryl. Med. Jour.*, May, 1905) states that little evidence is attainable by percussion and palpation in the early stages of tuberculosis. Auscultatory phenomena, while delicate, are audible to the careful examiner. An interrupted rythm, a weakened and rough inspiration are suggestive if found to persist over any definite area. General symptoms, even though slight, should be given careful attention. A slight hack, a constant desire to clear the throat, slight dyspnea, a localized pleuritic stitch, an indefinite neuralgic ache in the sternal or clavicular regions, accelerated pulse rate, capricious appetite, restlessness, night-sweats, disinclination to exertion, an afternoon rise of temperature, all should be regarded with suspicion. The tuberculin test should be used in all doubtful cases in the following way: A two-hour chart should be kept for three days before the injection. A one-half of a one per cent. solution of crude tuberculin is made in distilled water, and ½ to 1 c.c. (2½-5 milligrams) of tuberculin injected into a fleshy part of the body. A positive reaction is indicated by a rise of temperature, at least two degrees, over maximum temperature of the previous day, headache, backache, general malaise and nausea. The local signs in the chest are exaggerated at this time. If the test is negative the injection should be repeated after a two weeks' interval, using a larger amount of tuberculin.

## SURGERY.

**Surgical Treatment of Gastric Ulcer.**—The following heads may be considered under this subject: First, the perforation of gastric or duodenal ulcer. Second, the occurrence of hemorrhage in gastric or duodenal ulcer. Third, chronic ulcer. Fourth, hour-glass stomach. B. G. A. MOYNIHAN (*Brit. Med. Jour.*, April 8, 1905) states that there are few catastrophes so awful in their suddenness and in their intensity as the perforation of an ulcer. Obviously if the patient's life is to be saved, it must depend entirely upon early recognition of the lesion. Perforation has usually been described as acute and chronic. The author has, however, found a number of cases which should justly be classified as subacute. In the acute perforation, the lesion occurs suddenly and completely and the intestinal or gastric contents flow directly into the peritoneal cavity. In the subacute form, the ulcer probably gives away almost as quickly as in the acute, but on account of its small size or to the relative small amount of material in the alimentary canal or possible to a plugging of the opening, the damage inflicted is less. Furthermore, typically in the subacute form, there is usually a certain amount of pain before perforation. In chronic perforation a protective peritonitis has had time to develop at the base of the ulcer. In other words, the entire lesion has been walled off. In all probability medical treatment alone cannot save any of the cases of acute perforation. For convenience of description, the author has arranged the cases of hemorrhage in four groups. In the first, it is latent or concealed, is always trivial and often inconspicuous. In the second, it is intermittent, but occurs in moderate quantity, often spontaneously and at infrequent intervals. The patient's life in this class of cases is never jeopardized from the hemorrhage, although anemia is very constant. In the third class of cases, the hemorrhage occurs generally but not always after an exacerbation of chronic symptoms. It is rapidly repeated, is always abundant. Its persistence and excess cause grave terror and will, if unchecked, be the determining cause of the patient's death. In the fourth series of cases, the hemorrhage is instant, overwhelming and lethal. In dealing with these hemorrhages, two plans may be followed. By the first the surgeon searches for the ulcers and deals with them directly. By the second he deals with them indirectly by performing gastro-enterostomy and thus giving the ulcer an opportunity to heal. First thought would suggest that the primary method should be the ideal one. It has, however, been definitely shown that in many cases it is utterly impossible to find the bleeding point. Furthermore, once found, it has been shown to be often impossible to check it. Again the bleeding is very frequently from a multiple source. Gastro-enterostomy is curative of hemorrhage for the following reason: It immediately stops the distention of the stomach. The author has not had a single case in which the arrest of the hemorrhage has not been permanent, but many prominent surgeons including Kocher, have had failures. This Moynihan ascribes in every case to the use of the Murphy button, which has fallen back into the stomach and thus continued the traumatism to the ulcer. The symptoms caused by chronic ulceration are most variable. Dyspepsia and chronic ingestion so-called are both due undoubtedly in a majority of cases, to a mechanical change in the stomach, the result of chronic ulceration. The symptoms are determined very largely by the position of the ulcer, but size and extent of the lesion are also determining factors. Should the ulcer, for example, lie in the body of the organ, it may in its contraction give rise to an hour-glass stomach. The best symptomatic results are obtained by gastro-enterostomy in those cases where the ulcer is located at or near the pylorus. Probably there is no operation in all the domain of surgery comparable to the results obtainable in these cases. As time goes on, it will undoubtedly be shown that all cases of recurring dyspepsia should be treated by surgical methods. The author has performed gastro-enterostomy in 153 cases with two deaths.

**Pendulous Abdomen.**—To overcome the flabby, sagging condition of the abdomen seen in women fairly well advanced in life, in women who in earlier years were corpulent with prominent abdomen, J. P. CREVELING (*Buffalo Med. Jour.*, May, 1905) suggests the removal of an oval-shaped portion of the abdominal wall from the umbilicus to the pubes. The entire thickness of the abdominal wall being removed. The author reports two cases in which all symptoms due to the condition entirely disappeared after operation and the patients remained comfortable for several years.

**Traumatic Tetanus.**—That traumatic tetanus is attended by a high mortality is shown by BENTZ (*Buffalo Med. Jour.*, May, 1905), who states that 70 to 80 per cent. of cases die. This is probably due to the delayed effect of the toxin which is explained as follows: The toxin does not reach the spinal cord through the blood stream, but travels up the axis-cylinders of the motor cells, from their terminations. Sensory nerves do not transport toxin. Part of the toxin enters the nerves in the region of the wound, the rest is carried by the blood and lymph, to be later taken up by the motor nerves in other parts of the body. The toxin produces degenerative changes of the Nissl granules and protoplasm of the motor cells. The author considers the treatment under the following heads: (1) Thorough cleansing of all suspicious wounds, especially those contaminated by garden earth, also Fourth-of-July wounds. All wounds should be thoroughly freed of foreign matter by vigorous operative measures, and should be freely drained. The patient should receive an injection of 10 to 20 c.c. of tetanus antitoxin into the nerve trunk coming from that part. (2) Suitable legislative measures to prevent the manufacture and sale of dangerous toys. (3) Symptomatic treatment, including the use of bromides and other hypnotics and antitropin.

## GENITO-URINARY AND SKIN DISEASES.

**The Etiology of Urticaria.**—While investigating the effect of various drugs on the skin, J. BAUM (*Berl. klin. Woch.*, January 2, 1905) found that it was possible to produce typical urticaria wheals by the application of certain substances. The first drug which was followed by this effect was ethylenglykol, but a number of others were found which gave rise to similar appearances. After rubbing off the superficial epithelium with sand paper, the application of the athylenglykol produced a localized edematous swelling, similar to that of urticaria, which lasted from fifteen to thirty minutes. The writer also studied this phenomenon in the web of a frog's foot, and by the aid of a microscope was able to follow out the formation of a wheal. There was a temporary dilatation of the capillaries accompanied by a rapidly subsiding edema. There was no constriction of the veins, such as is believed by Una to be the cause of the trouble. There was no exudation of either white or red blood cells and no subsequent disturbances were noted. It is probable that the processes in the frog and the human skin are entirely analogous. It was also demonstrated that the reaction varied with the individual animals, which also seems to correspond with the fact that a particular disposition is necessary for the production of this lesion, which in the human subject may be designated as an idiosyncrasy.

**Nutritive Exchanges in the Dermatoses.**—That many cutaneous affections are not of local origin, but are the expression of some constitutional disturbances, is a fact well established. An experimental study of the metabolic derangements that accompany certain dermatoses was made by A. DESGREZ and J. AYRIGNAC (*Jour. de Physiol.*, January 15, 1905). They find that in individuals affected by the most diverse forms of skin disease, only one-third have a degree of corpulence that exceeds the average. On the other hand, general adiposity is markedly increased in 53 per cent of the cases. This fact, which is observed particularly in the eczemas, furnishes a new argument in favor of the relationship pointed out long ago by M. Bouchard between obesity and the dermatoses. The catalytic excitation (the excitation to catabolism) is increased in 89 per cent. of the cases. But, in fact, the histolytic activity (destruction of proteids) is below the normal in 90 per cent. of the patients. This reduction is most marked in alopecia, and is found in the various forms of eczema. In 60 per cent. of the cases, the ratio between uric acid and urea, which normally is 2.6:100, reaches the ratio of 3, 4 and 5:100. Likewise the quantity of phosphoric acid is increased. The last two observations suggest that the excess of uric acid is due to a relatively large disintegration of the nucleo-albumins, that is, of the nuclei of the cells.

## PRESCRIPTION HINTS.

**For Anemic Headache.—**

℞ Ferri reducti ..... gr. c
Acidi arsenosi ..... gr. iv
Phosphori ..... gr. i
Ext. nucis vomicæ ..... gr. xxv
M. Divide into one hundred pills.
Sig. One pill after each meal.

**For Subacute Prostatitis.—**

℞ Tinct. opii camphoratæ ..... ℥iss
Liquoris potassæ ..... ℥ii
Tinct. lupulini ..... ℥iv
Tinct. hyoscyami ..... ℥ii
Syrupi zingiberis ..... q.s. ad. ℥iii
M. Sig. Teaspoonful in half glass of water after meals and at bed time.

**For Seborrhea.—**

℞ Resorcin ..... gr. xl-lxxx
Glycerin ..... ♏x-xx
Alcoholis ..... ℥ss
Aquae destil. ..... q.s. ad. ℥iv
M. Sig. Apply locally every day or every two days, gradually lessening the frequency to once or twice weekly. Two or three grains of the alkaloid quinine may be added with benefit to each ounce of this solution when the tendency to alopecia is present.

**For Acute Cystitis with Hemorrhage and Pain.—**

℞ Morphinæ acetatis ..... gr. iv
Tinct. veratri viridis ..... ℥i
Tinct. hyoscyami ..... ℥ii
Syrupi zingiberis ..... ℥i
Aquae ..... q.s. ad. ℥iii
M. Sig. Teaspoonful in water every four hours.

**For Acute Tonsillitis.—**

℞ Tinct. aconiti ..... ♏xxiv
Sodii salicylatis ..... ℥i
Spiritus etheris nitrosi ..... ℥iv
Syrupi aurantii florum ..... ℥i
Aquae destillatæ ..... q.s. ad. ℥iii
M. Sig. Teaspoonful every one or two hours during the fever.

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## SATURDAY, JULY 1, 1905.

### THE FOURTH OF JULY ONCE MORE.

ETERNAL vigilance is the price of liberty, according to the old saw so familiar on the Fourth of July, and it's only eternally keeping at it that will perhaps eventually secure a reasonable freedom from the fatal accidents which an ebullient patriotism now inflicts upon the youth of the land, in the celebration of the Glorious Fourth. Last year there was a special effort made all over the country to secure an amelioration of the sad conditions shown by the statistics of fatalities and injuries the previous Fourth. As the result of this campaign of education, in which the newspapers of the country almost universally joined, there was from certain standpoints a very striking improvement in the statistics, though from other points of view, they remained eminently deplorable. In 1903 the price paid in human blood for the fireworks celebration of the anniversary of independence was 466 dead and very nearly 4,000 injured. In 1904 this had fallen to 183 dead, though there were more injured than in the previous year, yet the figures approached only a little closer to the 4,000 mark.

The really noteworthy improvement in the statistics came in the matter of tetanus. Two years ago there were altogether 415 fatal cases of tetanus reported. Last year the tetanus cases amounted to only 105. This reduction of nearly 75 per cent. in the incidence of this dread disease is of itself sufficient reward for all the efforts that were made last year to secure betterment with regard to the celebration of the Fourth. It is unfortunate that it has to be added that the deaths from other causes than tetanus increased last year by more than one-half. It seems evident that as the result of the campaign of education the special class of tetanus-bearing fireworks were eschewed by many patriotic celebrants and forbidden by many parents. Much stronger explosives were employed in their stead, however, and from them came the increase in the number of deaths due to the accident itself, and an increase in the total number of accidents.

Will the improvement in the statistics of tetanus reported last year continue, and shall we have the satisfaction perhaps of witnessing a still further reduction in the number of deaths from this disease? Unless the educational effort of last year is kept up, it seems not unlikely that there will be a relapse of vigilance and as a consequence an increase in the death-rate from tetanus. Last year the public press campaign was directed mainly against the deadly blank cartridge which is so often followed by tetanus, and as a consequence, the injuries inflicted by these were less than they have been for many years. Another phase of the improvement in the mortality statistics, however, must not be passed over in silence. There is no doubt that as the result of better knowledge with regard to the possible dangers in such cases, patients themselves and parents recognized the necessity for prompt and thorough treatment of all wounds made by blank cartridges with the idea that tetanus must be prevented at all hazards. Until last year such wounds were considered as appropriately treated by ordinary home dressings, and encouraged to close as soon as possible. Even physicians had not before been aroused to the danger in this matter, and blank cartridge injuries were only in recent years thoroughly cleansed, allowed to bleed freely and in serious cases, prophylactic injections of antitetanus serum were administered with apparently good effect.

All extra effort in the care of these cases must be maintained this year and public attention should be called just as vigorously as before to the dangers that are likely to ensue. On the other hand, some of the additional dangers in-

curred last year must not be forgotten. Certain zealous parents inferred that they should apply rather strong antiseptics to blank cartridge wounds and the result was in some cases severe sloughing and in a few cases even permanent deformity. By many persons antiseptics are supposed to be quite sufficient to kill any germs that may be present, and carbolic acid is looked upon as an extremely efficient germicide. Some foolish mothers wrapped the fingers of children in gauze wet with solutions of 5 per cent. carbolic acid, and gangrene ensued. There cannot be sufficient warning of the danger of applications of carbolic acid even in solution weaker than 5 per cent. to injured cutaneous surfaces. The first effect of the remedy is to produce a numbness and insensibility to pain, as the result of which the escharotic effect of the remedy may remain entirely without symptoms, while it is working serious harm. Dressings wet with solutions of carbolic acid, however mild, must not be allowed to remain for any considerable length of time, particularly on the skin of young children.

It is sad to think that we have to face another holocaust this year and that probably at least two hundred children will fall victims to the foolish celebration of Independence Day. Besides this, about 4,000 others will be injured, nearly 1,000 of them in some serious way. In this number there will be eyes lost, legs and arms lost and many fingers mutilated with a lot of so-called slighter injuries. It is the fashion and nothing can be done. Physicians must, however, as far as is possible, exert all the weight of their authority to bring about such improvements in municipal legislation as will put an end to this yearly waste of life which is so shamefully without proper purpose and brings sadness into so many families.

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### THE SYNTHESIS OF ADRENALIN.

THE valuable place which adrenalin holds in the armamentarium of the therapeutics of to-day has aroused the hope that some day a means of preparing this product of the mysterious chemistry of the body, synthetically in the laboratory, might be discovered. Apart from this commercial aspect, the artificial synthesis of this internal secretion cannot fail to have an important bearing on the broad subject of the physiology of the internal secretions.

H. D. Dakin (*Jour. of Physiol.*, May 9, 1905) has just reported his success in the preparation of a substance, which is not only allied to adrenalin, but also has the same chemical constitution. The details of the chemical steps necessary for this synthesis have not yet been published, nor has the identity of the natural and artificial products yet been accurately determined.

By a series of chemical processes not yet published it is possible to prepare from pyrocatechin a base having properties like those of adrenalin.

That this synthetic base is closely allied to the natural adrenalin, is indicated by the fact that the salts of the former show all the chemical reactions of the latter. But the natural substance is optically active, while the synthetic product is optically inactive. Both substances have the same physiological action, less than one millionth of a gram causing a rise in blood-pressure in the rabbit.

The author experimented with the various compounds that are intermediate steps in the preparation of the synthetic base, and found a progressive evolution of the peculiar properties of adrenalin.

The third in the series of synthesized compounds represented in the paper has a pressor effect which is insignificant when compared with that of its reduction product, the last in the series.

It has been possible to prepare a large number of allied ketone bases, and it has been found that their physiological blood-pressure raising effect bears a distinct relation to their structure. Thus the compounds having aliphatic groups (*e.g.*, methyl, ethyl, amyl and heptyl), have a greater effect than those having a mixed group (*e.g.*, benzyl), while those having a purely aromatic group (*e.g.*, phenyl, colyl, naphthyl), have, on the other hand, the effect of diminishing blood-pressure.

Pyrocatechin and its simple derivatives and homologues produce a distinct rise in blood-pressure. Moreover, substances in which the hydrogen of the phenol group is replaced are practically inactive.

The success of Dakin in discovering a product at least closely allied chemically and physiologically to adrenalin, if not identical with it, is certainly of profound interest to the pharmacologist, who may now look forward to the synthetic preparation of the other active principles of the ductless glands. To the physiologist, however, the results furnish a tempting subject for speculation. He beholds in them another extension of the conquest of modern scientific methods over the occult chemistry of the body.

It was Wöhler who first showed in 1828 that it is possible to prepare urea synthetically, and the progress in physiological chemistry has been such that an imitation of the finer chemistry of the internal secretions is no longer considered as beyond easy reach. From the practical standpoint, however, the artificial production of the internal secretions will bring these substances into the more extensive application which cheap manufacture affords.

### SPIROCHAETA PALLIDA AND CYTORRHYCTES LUIS, SIEGEL.

AT a recent meeting of the Berliner Medizinische Gesellschaft (May 17) Schaudinn and Hoffmann, as already outlined in the MEDICAL NEWS June 17, 1905, gave an account of their discovery of a special spirochaete—the *Spirochaeta pallida*, in syphilitic tissues (chancre, recent papules, inguinal glands, etc.). They also announced that Metschnikoff succeeded in demonstrating the same organism in the artificially produced syphilis of apes.

In this connection it is interesting to note that John Siegel, working in the Zoological Institute of the University of Berlin, has quite recently reported the discovery of a flagellate protozoon which he considers the specific cause of syphilis. His studies have appeared *in extenso* in the Proceedings of the Royal Prussian Academy of Sciences, of the current year.

Beyond this only a brief description of the organism—the *Cytorrhyctes luis*, from the pen of F. E. Schulze, the director of the Zoological Institute, has thus far found its way into the general literature.

It is stated that although it is possible to demonstrate numerous parasites in various stages of development in almost all the tissues of thoroughly infected apes and rabbits, the most striking pictures are obtained about three weeks after primary inoculation, with the parenchymatous juice of the kidneys. In this the organisms appear as actively motile, flagellated bodies, measuring only from 0.5 to 2.4 mikrons in diameter. They are fairly refractile, but can only be seen with the very highest apochromatic objectives, enforced by strong compensating eyepieces and the best illuminating apparatus. The larger forms appear as laterally somewhat flattened, pear-shaped bodies, provided with a single flagellum at each end, while in the smaller forms a flagellum is seen only at the tapering end. The organisms can be stained with a hematoxylin-azure mixture and can in this manner be demonstrated in sections of infected tissue. The larger forms then show two distinct round nuclei, while in the smaller bodies from 4 to 16 can be seen.

Further data are thus far not accessible, but will no doubt appear in the German weeklies in the near future, in the accounts of the proceedings of the meeting following Schaudinn and Hoffmann's paper, at which the main discussion of the subject was to take place.

## ECHOES AND NEWS.

### NEW YORK.

**Appointment at St. Mary's Hospital.**—Dr. William S. Bainbridge has been appointed consulting gynecologist at St. Mary's Hospital, Jamaica, L. I.

**New Hospital for North Brother Island.**—Plans have been filed with the Bronx Building Bureau for a new three-story hospital to be built on the southwest side of North Brother Island. It is to be of ornamental brick, 114 feet long and 73½ feet deep, and will cost $150,000.

**Report of Health Department.**—The Department of Health of the City of New York reports contagious diseases for the week ending June 24, as follows: Measles, 769 cases, 25 deaths; diphtheria and croup, 207 cases, 24 deaths; scarlet fever, 104 cases, 9 deaths; chicken pox, 115 cases; tuberculosis, 462 cases, 148 deaths; typhoid fever, 50 cases, 6 deaths, and cerebrospinal meningitis, 42 cases, 34 deaths. The death-rate for the week was 17.20 per thousand of population.

**City Gets Its Sanitarium.**—Dr. Thomas Darlington, president of the Board of Health of New York City, undaunted by his failure to secure a site for the establishment of a sanitarium for the care of New York City's tuberculosis patients in Sullivan County, has been quietly at work in the towns of Greenville and Mount Hope, Orange County, and has secured permission from the authorities of these towns to locate the sanitarium there. He has also secured options on several thousand acres of land, and it is now believed the sanitarium is assured. So quietly has Dr. Darlington worked that he had secured the required permission from the authorities and options on the lands before his object became generally known.

**Autopsy Material in Paralysis Agitans Desired.**—Dr. W. N. Berkeley, of 62 East Fifty-eighth Street, wishes to ask the readers of the MEDICAL NEWS who may be in a situation to help, if they can at any time put him in the way of obtaining some autopsy material from patients dying of paralysis agitans. The material of which he is in particular need can be removed without damage even as late as thirty-six or forty-eight hours after death. He will be glad to pay all the expenses that may be incurred, and will send a competent person to do the autopsy if it is impracticable for him to go himself. Full and grateful acknowledgment will be made of all help extended, if his present theory of the causation of the disease works out fully enough to warrant publication.

**Staten Island Mosquitoes.**—Some weeks ago Commissioner Darlington, of the Department of Health, appealed to the Board of Estimate for an appropriation of $10,000 to be used in exterminating the breeding

places on Staten Island. Comptroller Grout denied the necessity of the work, and, the majority of the Board agreeing with him, the appropriation was cut to $1,000. The New Jersey State Board of Health made remarks uncomplimentary to the spirit of the New York men, and their sarcasm prompted Dr. Darlington to send inspectors to investigate Richmond. They reported that $17,000 expended in a drainage system for the marsh lands would do away with the pest. The mayor would not believe so great a relief could be obtained at so small an expense, but professed willingness to be convinced. Dr. Doty was pressed into the service, and at noon on June 27 an inspection of the borough from the bay and ocean sides was made in one of the Quarantine boats. The mayor, Dr. Darlington, Assistant Corporation Counsel Hoyt, and Secretary O'Brien, made up the party. Borough President Cromwell met them at Stapleton.

**The Need of Psychopathic Hospital.**—Those who are interested in the establishing of the proposed Psychopathic Hospital in this city, for which the legislature some time ago authorized an expenditure of $300,000 contingent upon the gift of the site, may find an effective argument in the description of the recently established hospital in Munich, as given by Consul-General Mason, of Berlin, in a recent number of *Daily Consular Reports*. Mr. Mason says: "The modern psychiatrical clinic in Germany meets and fulfills two fundamental needs that exist in greater or less degree in every city or large town in the United States, namely, that the better facilities for the skilful treatment, care, and possible cure of cases of incipient and acute insanity; and, secondly, adequate provision for instruction in treatment and in the investigation of practical problems upon the solution of which must depend the arrest of increasing insanity among the people of the State. Its inestimable service to the community is that it provides for saving an indefinite but considerable percentage of the victims of incipient mental disease, and restores them to lives of usefulness instead of leaving them to degenerate into a menace to soceity and a burden to the state. It provides the most consummate examination and treatment at a stage of the disease when there is the most chance of averting or arresting an attack of real insanity. It detects and takes timely charge of the smaller but important class of patients who, without the knowledge of their friends, are on the border line of insanity, and liable at any time to become suddenly dangerous to themselves or others."

**The Aftermath of Cerebrospinal Fever.**—The *Herald* comments upon the meningitis situation in part as follows: "In summing up results many remarkable phases of the disease have been brought to light. The wonder is that the survivors should persist in living in spite of the number and severity of the successive complications. Children who became stricken in the beginning are still anxiously watched at death's door, with scarcely a hope that the valiant efforts of physician and nurse will be ultimately rewarded by the final recovery of the luckless victim. There have been no better examples of the severity and persistence of this disease than those that have shown themselves during the now passing epidemic. When spotted fever does not kill quickly, as it usually does in its acute and fulminating variety, it is apt to drift into a chronic form that may last for months, during which almost every vital organ may be in turn attacked by the virulent microbe. The marked fatality of the recent scourge has been in great part due to the number of brain complications that have been developed, producing profound organic lesions. In the majority of these death has been a mercy and saved the victim from the affections of blindness, deafness and mental imbecility. The most melancholy reflection in the present retrospect is that the medical profession, so skilled in other matters, is confessedly perplexed with many of the problems of this mysteriously periodical epidemic invasion. Apparently it has not yet been positively determined how the individual becomes infected, and through what particular channels the death dealing organism enters the system. Nor has any remedy been found as yet that can stay its ravages or check its course. If it is only a question of bad air and tenement life, some necessary preventive measures may be taken before the next visitation. But, theorize as we will, we are yet in sad need of facts. Perhaps the expert meningitis commission, if it can ever make a timely conclusion of its labors, may eventually settle the many disputed points at issue and give us that new hope for the future that we so sorely need."

## PHILADELPHIA.

**Elections.**—Dr. Charles K. Mills, professor of Neurology at the University of Pennsylvania, was elected consulting neurologist at the American Oncologic Hospital, and Dr. Samuel McClary assistant pathologist.

**Death from Communicable Diseases.**—According to the report of the State Board of Health, 15,000 people died of communicable diseases last year. A few months ago a case of typhoid in Bucks County caused 54 of enteric fever in the Twenty-sixth and Thirty-sixth wards of Philadelphia.

**To Study Leprosy in India.**—Dr. Judson Daland, clinical professor of practice of medicine at the Medico-Chirurgical Hospital, has gone to India to study the effects of "Leprolin" at the lepra colony of that country. The improvement in the case now at the Municipal Hospital has induced him to go to India.

**As a Prophylaxis for Tetanus.**—The Pennsylvania State Board of Health has determined to supply physicians with tetanus antitoxin to be injected into individuals receiving wounds from blank cartridges on the Fourth of July. The dose shall be from 5 to 10 c.c. and shall be injected, preferably, near the seat of the wound.

**Mule Develops Hydrophobia.**—Dr. E. M. Gratchel, of West Chester, has in his possession a mule bitten by a rabid dog. The mule has typical symptoms of the disease which were first noticed about one week after the inoculation; the animal is isolated and is being watched, especially with reference to the progress of the malady.

**Patient Puzzles Physician.**—A man who said he was a locomotive engineer from St. Louis, entered the Hahnemann Hospital and stated he had been in Panama. Thinking that the patient was suffering with yellow fever he was isolated and a consultant sent for. At the consultation no exact diagnosis was made, but it was thought that the man was suffering with typhus fever.

**Bequest.**—Mrs. Pauline E. Henry, formerly of Philadelphia, and founder of the Germantown Hospital, died at her home in New York City May 15. She bequeathed to the institution named $10,000, the income of which shall be used to maintain two beds for incurable female patients, and $5,000 as an endowment fund. She left $2,000 for the Woman's Hospital to endow a "Scholarship for Nurses."

**Reception of the Medical Club.**—At this assemblage Dr. William S. Forbes, professor of anatomy at the Jefferson Medical College, congratulated the members of the club upon the fact that the hatchet has been

buried by the Alumni of the University of Pennsylvania and the Jefferson Medical Schools, and that a new era of cordial relations has been established. Addresses were made by Dr. Roland G. Curtin, president of the club, and by Dr. George Simmons, editor of the *Journal of the American Medical Association*.

**Indian School will get no New Hospital.**—Unless Secretary Hitchcock is able to induce the next Congress to be more liberal in its appropriation for the school at Carlisle, they will not get the new hospital which is so badly needed. At the last session, Congress appropriated $150,000 for general repairs and improvements and $10,000 for an addition to the present hospital. The Commissioner of Indian Affairs attempted to use part of the $150,000 to build an entirely new hospital instead of an addition, but Comptroller Tracewell decided against the scheme.

**Aid for Consumptive Mill Workers.**—Because their occupation exposes them to tuberculosis the mill workers of Kensington will receive free treatment at a dispensary to be organized and maintained by the Anti-Tuberculosis Society of Kensington. These advantages have been obtained through the efforts of Sister Marie Keck, a Lutheran deaconess, and Rev. C. S. Fry. A private dwelling bordering on the mill district will be selected for the dispensary and the same treatment will be instituted as has been adopted at White Haven. Dr. Lawrence F. Flick will be appointed advisory physician and Dr. W. G. Eisenhardt physician in charge of the work.

**Dr. Dixon Names his Assistant.**—Last week Dr. Dixon, Health Commissioner of the State of Pennsylvania, appointed Dr. Benjamin Lee, secretary of the recently abolished State Board of Health, Assistant Commissioner, and Dr. Frederick C. Johnson, of Bradford, McKean County, Chief of Division of Inspecting, Quarantining and Disinfecting. In a letter notifying Dr. Lee of the appointment Dr. Dixon wrote: "Your long and faithful service in the late Board of Health, which labored for many years for the good of humanity under great disadvantages, has given you especial fitness for the work of aiding me to establish and successfully build up the new Department of Health."

**How Undertakers Can Aid Doctors.**—In an address before the convention of the Funeral Directors' Association of Pennsylvania, Dr. A. C. Abbott spoke of "The Part Undertakers May Play in Preventing the Spread of Diseases." In the course of his talk he said that but few undertakers are open to criticism for failing to use proper precautions in regard to the spread of diseases, but the fact that there are a few makes it an important question. He maintains all instruments used for embalming should be sterilized, all clothing, furniture and carriages used at the funeral should be disinfected. Dr. Abbott mentioned the fact that he had heard of instances where the undertaker had observed all the precautions prescribed by law, but allowed the family to undo his work after he had gone.

**Report of Diseases of Animals.**—Governor Pennypacker met the State Live Stock Sanitary Board last week at Harrisburg and listened to the report made by Dr. Leonard Pearson, that rabies is prevalent in Western Pennsylvania and that dogs in McKean, Cameron, Warren and Venango counties are in quarantine. An outbreak of glanders in Lancaster County was reported. The investigations of vaccination of cattle against tuberculosis are progressing favorably, and it was stated that the procedure may be a success. With the view of establishing a permanent research station the board has taken steps toward buying a farm for the purpose. A resolution was adopted requesting railroad and express companies to make regular reports to the secretary of the board of the shipments of cattle from other States into Pennsylvania.

**War on Tuberculosis.**—In consequence of the visit paid by Dr. Paul Kennedy, of New York, representing the American Society for the Prevention of Tuberculosis to the Executive Council of the American Federation of Labor, the last-named organization has decided to extend an invitation to the Society for the Prevention of Tuberculosis to have a representative address the Pittsburg convention of the American Federation of Labor upon the subject of tuberculosis, its prevention and treatment. The representative will suggest plans by which organized labor may render effective work to arrest the disease in those suffering with tuberculosis. It was also decided to send delegates from the Federation of Labor to the congress and exposition to be held in New York next November, under the auspices of the American Society for the Prevention of Tuberculosis. So soon as the regulations complying with an act made lawful by the last legislature the Board of Health will request physicians to report all cases of tuberculosis. Dr. A. C. Abbott is of the opinion that much good will result, since the reports will indicate where the disease is most prevalent, so that overcrowding and filth can be prevented.

## CHICAGO.

**Appointment of Dr. Whalen.**—Dr. Chas. J. Whalen has been appointed by Mayor Dunne to succeed Dr. Arthur R. Reynolds as Commissioner of Health of Chicago.

**Officers of the Chicago Medical Society.**—At the annual meeting of this society, held June 21, Dr. Chas. S. Bacon was elected President, succeeding Dr. John B. Murphy, and Dr. Frank X. Walls, Secretary. Reports were presented from the branch societies, the affiliated societies, from the Council, the Medicolegal Committee, the Organization Committee, Board of Trustees, and the Secretary.

**Meeting of Association of Military Surgeons of the State of Illinois.**—The annual meeting of this body was held at Danville, June 8, under the Presidency of Colonel Nicholas Senn. The Secretary is Lieut.-Col. Chas. Adams. A paper on "Influenza," was read by Dr. Chas. D. Center, of Quincy. Lieut.-Col. Geo. P. Marquis, of Chicago, read a paper on "Mastoid Operations." Col. Senn presented an abstract of an exhaustive article by him on "Iodine and its Use as a Bactericide;" while Capt. S. C. Stanton, of Chicago, demonstrated the method of physical examination of recruits. The next meeting of the association will be held at Moline.

**Mortality Record.**—While the June, 1905, health rate is not up to the record of June, 1904, according to the weekly bulletin of the Health Department of Chicago, the improvement during the week, measured by the mortality returns, will bring it higher than the average of the decade. For the elapsed seventeen days, the rate is 12.73; for the week, it is 12.01, and the average of the decade is 14.00. June, 1904, is the record month of lowest mortality, the rate being 11.02 per 1,000 of the population. Among the important causes of death showing decrease, the most notable are pneumonia, 18; consumption, 10; heart disease, 12; Bright's disease and measles, 8 each, and typhoid fever, 4. On the other hand, the acute intestinal diseases show an increase of 12; bronchitis, of 9, and diphtheria, of 4. Only two suicides were reported during the week—the fewest number in any one week for years, the aver-

age weekly number during the previous ten years being 7.5.

**Permanent Home for the Chicago Medical Society.**—The Committee on Permanent Home, consisting of Drs. Nicholas Senn, Wm. A. Evans, Frank S. Johnson and David J. Doherty, after several conferences with the officials of the Crerar Library and with the Newberry Library Trustees, the Committee came to the following conclusions: (1) That it is the intention of the Crerar Trustees to make their library the center of scientific activity in Chicago, and that, therefore, they will provide meeting quarters for scientific societies, and particularly will they so arrange their plans as to accommodate the Chicago Medical Society, both for its meetings and its popular lecture course. Such use of their building will be free as to rental, but incidental expenses will be borne by the society. (2) It is the intention of the Newberry Library Trustees to transfer its medical department to the Crerar Library. In this connection, Dr. Senn approves of the transfer of the Senn Medical Library to the Crerar, provided that it be kept as a separate unit and sufficient space be allowed to let it grow on the lines he has marked out. He intends to make it a great historical medical library—the progress of each department of medicine to be shown by a complete collection of books pertaining to it. (3) The preliminary plans of the Crerar Library are now being studied; the final plans will be decided on next winter; ground will be broken in the following spring, and the library building will be in use in three years.

## GENERAL.

**Massachusetts Medical Association.**—The following officers were elected at the recent meeting of the Massachusetts Medical Association: President, Dr. Arthur T. Cabot, of Boston; Vice-President, Dr. Frederick H. Thompson, of Fitchburg; Treasurer, Dr. Edward M. Buckingham, of Boston; Corresponding Secretary, Dr. Francis W. Goss, of Roxbury; Recording Secretary, Dr. Edward H. Brigham, of Brookline.

**Dr. Kelly in London.**—Dr. Howard Kelly, Professor of Gynecological Surgery in the Johns Hopkins University at Baltimore, was entertained at dinner by Dr. Macnaughton-Jones at the Cafe Monaco, London, on June 8. Immediately after dinner those present went to 20 Hanover Square, where Dr. Howard Kelly delivered to the British Gynecological Society the address on "Some Surgical Notes on Tuberculosis of the Kidney," which is published in the *British Medical Journal* for June 17, 1905.

**Alaskan Medical Association.**—At Nome, Alaska, the medical men of the far Northland recently met and organized the Northwestern Alaska Medical Association. There are ten or more charter members and the officers elected for the current year are A. L. Derbyshire, President; H. S. Moore, Vice-President, and W. D'Arcy Chace, Secretary and Treasurer. Several profitable and pleasant meetings have already been held. This is probably the first medical organization in Alaska and the most northerly one under the stars and stripes.

**To Stop Cut Prices on Patent Medicines.**—Strenuous measures are being adopted by practically all the manufacturers of the best known preparations, who are compelling all retail druggists to sign ironclad contracts not to sell the goods in question at less than a rate fixed much higher than those which have been prevailing. For some time it has been understood that goods would not be sold to dealers known to cut prices, but this was a rule easily evaded. Now, however, it is announced that the contracts will be rigidly enforced, and a system of numbered packages is contemplated to assists the manufacturer in keeping track of the dealers and their prices.

**Esquimaux Obstetrics.**—Last year the wife of a Bostonian at Cape Prince of Wales, was pregnant with her third child. Previous labors had been difficult. When she was in labor no physician was to be found within 150 miles. Her husband called in two Esquimaux women and explained the case. They at once made a belt of stout muslin about ten inches wide and took a turn around the patient's body at upper limit of tumor. Then a long pull, a strong pull and a pull all together and the delivery was accomplished with neatness and despatch. Everything was lovely. This is absolutely authentic asserts Dr. W. D'Arcy Chace, of Nome, Alaska.

**Medical Society of the Missouri Valley.**—The annual meeting of this organization will occur on Thursday and Friday, August 24 and 25, in the city of Council Bluffs, under the presidency of Dr. S. Grover Burnett, of Kansas City. The local arrangements are in the hands of Dr. V. L. Treynor, and an able corps of assistants, and this means a good time. Two symposiums, one on "Pulmonary Tuberculosis," and the other on "Diabetes," will be presented. Those who wish to contribute papers on these or any other subject, should communicate with the secretary at once, as the program will be limited, and papers will be placed in the order in which the titles are received.

**Charities and Corrections.**—The National Conference of Charities and Correction meeting in Portland, Oregon, on July 15, announces the following program for the evening session of July 20: Committee on Care of the Sick: "Report of Committee," by Nathan Bijur, President New York State Conference of Charities of 1905. A general report covering three phases of the dealing with the sick as follows: "Prevention of Diseases by Improved Housing, Sanitary and Economic Conditions," by Dr. Norman Bridge, of California; "The Actual Care of the Sick in Hospitals, and Care of the Sick in their Homes," by Dr. Walter Lindsley, of Los Angeles; "Convalescents: Their Care from the Medical Standpoint and Light Employment for Them," by Dr. Lee K. Frankel, Superintendent United Hebrew Charities of New York. A discussion will follow.

**Bubonic Plague on Isthmus.**—Reports from Panama assert that a fatal case of bubonic plague occurred at La Boca on June 23. The constant arrival of steamers from infected South American ports, which are recived at La Boca without any extra precautions, must be a source of contagion. The dead man had been working on board the British steamer Chili, which the authorities of Guayaquil would not allow to enter that port. The companions of the dead laborer have been isolated. Rats taken from the steamer Chili are now being examined at Ancon. The Board of Health of Guayaquil, Ecuador, on June 12, refused to admit the British steamer Chili, which had arrived there the day previous from Iquique, Chili, and she left later the same day for Panama. While the Chili was on her way to Guayaquil three persons died on board, and it was believed that bubonic plague was the cause of their death. La Boca is a small place about three miles from Panama, with which it communicates by a plank road.

**Woman's National Sabbath Alliance Asks Cooperation.**—The attention of the Woman's National Sabbath Alliance having been called to the harmful effect of overtaxing brain and nerves, resulting from incessant excitement and toil, appeals to the medical faculty for a leaflet of not more than 2,500 words, demonstrating the urgent need of a weekly mental and physical rest-day

as appointed of God, for the moral and religious welfare of man, and offers a prize of $25 for the best essay on this subject. The experience of a Christian physician is preferred. Manuscripts with the name and address of the writers in a sealed envelope, will be received until the first of November next, at the headquarters of The Alliance, Room 709, 156 Fifth Avenue, New York City. The accepted manuscript shall become the property of the Alliance, and the others will be returned when called for or accompanied by the full amount of postage needed.

**A Modern Hospital for the Insane.**—In a recent issue of *Daily Consular Reports*, United States Consul-General of Berlin describes the new psychiatrical clinic at Munich, "which, in all that relates to perfection of equipment and arrangement, as well as to the scientific enlightenment of methods employed, stands undoubtedly at the head of all institutions of its class in this or any other country. The edifice includes the central or administration building, with two wings, which form the front and sides of an open court or garden. In the central structure are located laboratories for pathological, chemical, and psychological studies, a fine medical library, rooms for the reception and examination of patients, and the private rooms of the director. The apparatus and facilities for every form of research connected with any question relating to preventing, detecting, and curing insanity are as elaborate and perfect as experience and up-to-date science can suggest. It has accommodations for 110 bed patients of both sexes, besides a large dispensary on the ground floor for the treatment for voluntary patients who come in at stated periods, but live otherwise at home. Although opened only a few months ago, the clinic will have treated not less than 2,000 patients before the close of its first year. For this hospital, with only 110 beds, the city of Munich, a city of 280,000 inhabitants, was willing to spend $500,000."

**Hospital Interne (Male). Examination for Panama Canal.**—The United States Civil Service Commission announces an examination on July 12-13, 1905, at the principal cities of each State, to secure eligibles from which to make certification to fill vacancies in the position of hospital interne under the Isthmian Canal Commission on the Isthmus of Panama. Each applicant for the Isthmian Canal Service will be required to submit to the examiner, on the day he is examined, a photograph of himself, taken within three years, which will be filed with his examination papers as a means of identification in case he receives appointment. An unmounted photograph is preferred. The date, place, and kind of examination, the examination number, the competitor's name, and the year in which the photograph was taken should be indicated on the photograph. Age limit, twenty to thirty years on the date of the examination; salary, $50 per month, with board and quarters, provided that if appointees are retained in the position of interne after one year they will be paid $125 per month. Only graduates of reputable medical schools having a three years' course will be admitted to this examination. The county officer's certificate in the application form need not be executed. Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners. The medical certificate in Form 1312 must be filled in by a reputable practising physician. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

**Civic Duties of Physicians.**—At a recent meeting of the Massachusetts Medical Association Dr. Louis D. Brandeis delivered a lecture on the political duties of the physician, taking as his text the failure of the city government to build the hospital for consumptives. This failure he attributes to the fact that "physicians are of no political significance," "Despite your numbers and your education, your college and your university degrees, you count as nothing politically when compared with the great leisure class employed by the street department, or, indeed, the employees of less favored departments. For you may well bear in mind that of all the $3,426,600 appropriated for various purposes in the loan bill of July 3, 1901, this $150,000 for your consumptives' hospital is the only amount which has not been expended; indeed, nearly two years ago it figured as the only authorized loan under that bill which had not been paid. That master sanitarian, Gen. George F. Waring, discovered the method of cleaning New York's streets. It was 'to put a man instead of a voter at one end of a broom.' I think the converse of that is true with respect to your movements in aid of public health. To accomplish your ends we must have a voter as well as a physician behind your effort—a vote to enforce the effort of each one of you to advance your cause. As I stated at the outset, intelligently working citizenship is essential to the success of your beneficent plans, and this intelligent working citizenship necessarily involves not merely your participation as voters in city affairs, but your organized participation. Your citizenship can be an intelligent, a working citizenship only through organization. You must connect yourself with other forces that are active for good government, and fortunately the existence of the Good Government Association affords you an easy means toward the organization of your forces. The Bar Association, the Merchants Association, the Fruit and Produce Association, and others have all joined forces in an effort to secure a better city government. Must not you do likewise in order to accomplish your ends?"

**Mental Phenomena Connected with Anesthesia.**—The following circular letter issued from the department of psychology, Wisconsin University: While in the deeper stages of anesthesia mental processes are usually so entirely submerged as to fall beyond the possibility of record, in the lighter stages and in the period of approach to, and most favorable of all, in the period of recovery from more complete anesthesia, the power of response to outward stimuli is sufficient to afford ample opportunity for a series of observations which furnish the motive to the present inquiry. The cooperation of surgeons and anesthetizers is invited to secure data that bear upon any of the questions summarized below, or upon the general problem thus suggested. Special attention is directed to the importance of tracing relations between the phenomena recorded during anesthesia and the normal, waking, mental traits of the subject. Indeed the former can in many cases be interpreted only in the light of the latter; and observations become of value in proportion as the subject is able to account for the mental experiences of the unusual state of references to the normal source and trend of his mental processes. To determine these, skilful questioning controlled, where possible, by ingenious tests, will be the most effective instrument of inquiry.

(1) *Analogies Between the Lighter States of Anesthesia and Hypnosis.*—Of these the chief trait is *increased suggestibility:* Will the patient carry out automatically with enfeebled consciousness suggestions given by the operator to do thus and so, to feel or neglect certain sensations, to follow a train of thought, to carry

out a code of signals between subject and operator? Is obedience to such suggestions apparent by facial expressions, involuntary cries, nods, etc., after more controlled forms of reaction have disappeared? Is there evidence that patients respond to similar suggestions not directly addressed to them? Do they react to the conversation of the attendants, to a vague knowledge of their surroundings, to interpretations, correct or incorrect, of what is actually going on? Are there any of these responses that reflect the normal habits, idiosyncrasies, etc., of the waking condition? Do they belong to the experiences immediately preceding or to a more remote past? Next in importance are the automatic activities. Illustrations are desired of automatic talking, mechanical acts, and simple tricks of manner, of the type so common in sleeping persons who walk and talk in their sleep, answer questions without awakening, make movements as of knitting, counting money, etc., or other betrayal of their subconscious thought. In very favorable instances, it may be possible to place a pencil in the patient's hand and secure by questioning a subconscious answer or scribble or drawing that throws interesting light upon what is going on in the mind, even when there is but partial consciousness of surroundings or direction of mental processes. Such observations have especial value and should be accompanied by the actual records.

(2) *Analogies Between the Lighter States of Anesthesia and Dream Life.*—If the patient be questioned as to what occupied his mind up to the moment of losing consciousness and again during the regaining of full consciousness, there will inevitably result a valuable collection of data regarding the waning and waxing states of consciousness. Many of these phenomena will be dream-like, and should like dreams be recorded with ample detail to make them intelligible. The nature of the impressions, whether visual or auditory, acted or felt, and most of all the connections between the dreams and the recent or remote experiences of waking are important items. Just as ordinary dreams become interesting when they are connected with normal experiences, so in the dreams of anesthesia the patient alone can give adequate personal detail to give significance to the narrative.

(3) *Other Points of Interest.*—The specific points enumerated are intended to make the matter definite rather than to limit the scope of the inquiry. Evidence is desired that bears in any degree of pertinence upon the general problem thus suggested. As additional points of interest may be mentioned the following: In cases of repeated anesthesia after rather brief intervals, it is possible to elicit evidence that in the approaching or receding consciousness, details are remembered (or recallable by suggestion) which though beyond the control of the waking consciousness, are thus shown to connect one state of abnormal consciousness with another similarly caused. The analogous fact is that in hypnosis the subject will tell in a second hypnotization what happened while he was formerly hypnotized, but cannot recall in the waking interval; or again, in changes of personality the relapse into the altered personality will bring with it the control of memories of the last states of abnormal personality, which were not recallable in the normal state. Dreams and the actions of drugs show similar phenomena. Where records of this kind are available through anesthesia, they should be recorded in detail, and a conclusive set of questionings and tests be made to elicit how far the two states are connected. A further point of interest is the correlation of different types of mental states with different degrees of anesthesia. For this purpose it is desirable that some physiological sign of the degree of anesthesia be recorded as evidence in general of the depth of anesthesia during which the mental phenomena were observed. The variations of susceptibility to an anesthetic are such as to make it important to estimate the susceptibility in each case, as well as to give such general data as the age, sex, occupation, condition in life, physical state, temperament, purpose for which the anesthetic was administered, length of period under its influence, degree of nervous shock accompanying the same, and so on. The general use to which the data will be placed will be that of formulating a consitent account and interpretation of the range of subconscious mental states, including simple states of distraction, absent-mindedness, reverie, trance, hypnosis, dreams, the actions of drugs, alterations of personality, lapses of memory, states of confusion, and the reactions to anesthetics. It is hoped that a sufficient series of data will be elicited by the present inquiry to throw important light upon processes as yet imperfectly understood, and the analogies of which to such artificially induced states as those accompanying anesthesia are of especial importance. The psychologist has naturally but little opportunity to observe these phenomena and must thus appeal to those who are professionally engaged in their production, to step aside from their main interests to supply in a spirit of cooperation the data so valuable to students of a different and yet not unrelated science. Full credit will be given to all contributions, and no direct or personal use will be made thereof in print without distinct permission. Those to whom this circular letter is addressed are hereby invited to send records of such observations and to further the purposes of this inquiry in such ways as may lie in their power. The undersigned will appreciate, both personally and professionally, favorable action upon this request. Joseph Jastrow, Madison, Wis.

## OBITUARY.

Dr. WALKER BRYAN, of 105 Madison Avenue, New York, was found dead in a chair in his office early on June 26. Dr. Bryan's body was removed to the home of his parents at 372 Clermont Avenue, Brooklyn. He was thirty-eight years old and a graduate of the College of the City of New York and the College of Physicians and Surgeons. He had been practising for fifteen years. He was a member of the faculty of the Brooklyn College of Pharmacy and leaves a widow.

Dr. JOHN H. HINTON.—At a stated meeting of The Medical Association of the Greater City of New York, held June 12, 1905, the following report was presented and adopted:

Dr. John H. Hinton, one of the founders of this association, was born in the City of New York in 1827, nearly four score years ago. He was the son of John and Helen Frazer Hinton, also of New York City. Dr. Hinton was one of the rare examples of a typical New Yorker. Since early youth he had watched with civic pride, the marvelous development and wonderful progress of the old town to the Greater City of New York. Places that once resounded with the echo of his gun while hunting for game are now compact city blocks. Places where he gathered specimens for his cabinet of minerals are now covered with palatial dwellings. He received his medical education at the College of Physicians and Surgeons of this city and was graduated in 1852. He then spent two years in Germany, continuing his studies in special branches. After his return he was married to the daughter of Henry Elswood, a merchant of New York. She and three chil-

dren survive him. For many years he was associated with Dr. Alfred C. Post, whom a few of us can remember as a genial and lovable man. One of Dr. Hinton's children bears the doubly honored name of Alfred Post Hinton. At the outbreak of the Civil War Dr. Hinton entered the United States Army as surgeon. At the close of the war he was appointed visiting surgeon to the Presbyterian Hospital. Dr. Hinton, though deeply interested in everything that pertained to his profession, was fortunately not dependent upon it for his support, and found time to apply himself to those pursuits which attract a man of culture and means. He was an enthusiastic and discriminating lover of rare books, and his collection, the product of years of search, is, in its various branches, one of the most valuable in the city. He was also fond of the drama in its higher and better forms, and for many years was the friend of Joseph Jefferson. Two of the chief traits in Dr. Hinton's character were his outspoken candor and his sterling integrity. He was for many years treasurer of the New York Pathological Society, treasurer of the Society of Widows and Orphans of Medical Men and treasurer of the American Folk Lore Association. As a citizen interested in the welfare of the State and Nation, he was a member of the Union League Club; as a patron of the drama, a member of the Grolier and Players' clubs. In art and natural science he filled a place in the Metropolitan Museum of Art, the American Museum of Natural History, the American Geographical Society, and the New York Botanical and Zoological societies. A broad-minded man of diversified tastes, a sincere man, a man of unswerving integrity, loved and respected, his life filled with years and honor, after a lingering illness of some two months he passed over to the great majority to receive the reward of faithful service, on April 26, 1905. Your Committee, in presenting this record, offer the following resolutions:

RESOLVED, That by the death of Dr. John H. Hinton this association has lost a distinguished and honored member.

*Resolved*, That we extend to the bereaved family our profound sympathy for them, in this, the time of their sorrow. (Signed) R. E. Van Giesen, *Chairman;* P. Brynberg Porter, J. Blake White, *Committee.*

## CORRESPONDENCE.

### LATUREN VS. BOLTON DRUG COMPANY.

*To the Editor of the* MEDICAL NEWS:

Perhaps the most remarkable legal opinion on a medical subject which has ever emanated from the Supreme Court of the State of New York is the following, which was handed down on May 15, 1905, by Mr. Justice Gaynor, in the case of Laturen *vs.* Bolton Drug Company:

"SUPREME COURT, STATE OF NEW YORK,
(Second Department).
Emma F. Laturen
*vs.*
Bolton Drug Company.

Action for damages for alleged negligence in filling a physician's prescription, by which the plaintiff claims to have been poisoned with morphine.

Motion for a new trial on the minutes, the Court having dismissed the action on the evidence produced by the plaintiff.

Edmund F. Driggs for the plaintiff.
Charles C. Nadal for the defendant.

Gaynor, J.: The charge in the complaint against the defendant is negligence by its pharmacist in filling a prescription of Dr. Cruikshank for the plaintiff, by which she was poisoned by an overdose of morphine or opium, as is claimed.

The prescription was in the following words, viz.:

"Elixir Pinus Comp. cum Heroin, ounces 4—Merrill's. One teaspoonful in water every four hours."

The pharmacist saw that it only called for a patent medicine put up and sold in bottles by Merrill (at Cincinnati). It did not call for an original bottle of the medicine, but for a smaller quantity in a four-ounce vial. There was a bottle in stock, the printed label thereon bearing the name "Elixir Pinus Compositus," which the prescription called for, and that being the name under which the medicine was advertised and sold. But the pharmacist saw that the doctor's prescription had, after the name of the said elixir (as we have seen) the additional two words "cum Heroin," which is Latin for "with" Heroin.

These two words were not on the label of the bottle. The pharmacist therefore looked into the pamphlet advertisement of Merrill's patent medicines, which he had in the store, and found that Merrill also put up the said "Elixir Pinus Compositus" in the same bottles with the same name on the label, but with the additional two words under it on the label, "with Heroin," not "cum Heroin."

The formula given by the pamphlet also showed that the amount or proportion of Heroin was 1-24 of a grain to the dram, or teaspoonful dose. The pharmacist therefore, in order to fill the requirement of the words "cum Heroin," in the doctor's prescription, added the said 1-24 of a grain of Heroin to the dose, and thereby literally filled the prescription which, as we have seen, called for "Elixir Pinus Comp.," with the added two words "cum Heroin" (with Heroin).

There was plainly no negligence in this. The prescription was none too careful; it did not even correctly follow the words of the label of the patent medicine bottle it was filled from; but it was intelligently read and filled.

It is claimed, however, that there was a negligent oversight by the pharmacist, in that he let in one ingredient too many.

The pharmacist properly added 1-24 of a grain of Heroin for each dose, but it is claimed that he negligently left in 1-16 of a grain of morphine acetate for each dose.

And that came about as follows: By the formula printed on the bottle label the said "Elixir Pinus Compositus" is shown to consist of nine separate drugs in certain proportions, the seventh being the said "Morphine Acetate, 1-16 gr."

By the formula printed on the label of the bottle of the other mixture, *i. e.*, of the said "Elixir Pinus Compositus, with Heroin," it is shown to consist also of nine separate drugs in certain proportions. They are the very same as those on the label of the bottle of the "Elixir Pinus Compositus," except that the seventh, morphine acetate (1-16 gr.) is omitted, and Heroin (1-24 gr.) is substituted in its place.

The pharmacist, however, added the 1-24 grain of Heroin the dose to the bottled "Elixir Pinus Compositus," which contained the 1-16 grain of morphine acetate to the dose, as we have seen; wheras, if the prescription had been filled from a bottle labeled "Elixir Pinus Compositus, with Heroin," the 1-16 grain of morphine acetate would not have been in it, as it is omitted from that bottle, as we have seen.

The question, therefore, arose whether, if it be conceded that this was a negligent oversight by the pharmacist, the plaintiff could have been poisoned by it.

Heroin is a preparation of morphine, as is also morphine acetate; so that the two together in the prescription

made more morphine to the dose than if the 1-24 of a grain of Heroin only had been in it.

But the uncontradicted evidence in the case is that both combined would make only 1-10 of a grain of morphine to the dose. And there was no evidence whatever in the case that 1-10 of a grain of morphine in a dose, taken every four hours, could cause morphine poisoning. On the contrary, the uncontradicted evidence is that it could not do so, but that 1-5 of a grain increased to ¼ of a grain every hour would be usual and entirely safe; whereas the plaintiff's dose was only 1-10 of a grain every four hours, and she took only four doses. When we consider that morphine is not a cumulative poison, but that no effects of a dose of 1-10 of a grain, or even of a much larger dose, would remain in four hours after it was taken, we perceive the entire lack of foundation to the claim put forward for this plaintiff that she was poisoned by morphine.

On this state of the evidence it did not seem to me that there was any evidence on which the jury could be permitted to find that the plaintiff was poisoned by an overdose of morphine, and I therefore dismissed the case. It was not for the jury to guess; the fact had to be proved. I would now grant a new trial and send the case to a jury did I not remain of the same opinion. Moreover, I believe that a Court may take judicial notice of the scientific fact that 1-10 of a grain of morphine taken every four hours could not have poisoned the plaintiff.

It is very evident that the names on the two bottles are, taken together, very misleading. The name "Elixir Pinus Compositus with Heroin" is obviously wrong, for the contents of the bottle are in fact "Elixir Pinus Compositus," not merely "with" Heroin, but also "without" morphine acetate. For this reason the doctor's prescription was negligent. It should have unmistakably distinguished between the two bottles, since the names on their labels did not.

My attention is called to the fact that the doctor has published in a medical journal, and otherwise, the false and invented statement that it was decided in this case that a pharmacist may change a doctor's prescription, or substitute some other medicine than that it calls for, without liability. I regret to feel obliged to say that he is so well known in our courts, where he has been for many years connected with litigations of an unsavory character, to say the least, that no notice needs to be taken of his false statement so far as the legal profession is concerned, and I understand that to be so of the medical profession also. But lest any drug clerk may be misled by such false statement to the danger of others, it seems proper that I say that not only was no such thing said or decided, but it was not presented or even mooted. Where would counsel be found to present and argue such an absurd proposition?

The motion is denied."

This opinion is remarkable in all respects, but it is probably unprecedented in the history of medical jurisprudence, because of the glib and flippant manner with which the learned Trial Justice, in dealing with the important subject of the administration to human beings of so poisonous a drug as morphine, completely ignores therapeutic and toxicological authority.

When this opinion is examined in the light of medical science, it will be found so thoroughly deficient in knowledge of the medical subjects under consideration as to cause every thoughtful physician to shake his head in despair. Were it not for the fact that the opinion in question is handed down from a Court of the highest original jurisdiction, and also for the fact that the subjects with which it deals are those which closely concern the health and even the lives of human beings, it would be unworthy the serious consideration of any member of our profession.

Under the present circumstances, however, the opinion, it seems to me, should not escape the thoughtful attention of the entire community.

The idea of Divine right of personal government in our country perished in giving birth to the "Declaration of Independence;" therefore, it is no longer claimed that our courts should be infallible; on the contrary, it should be understood that their decisions, in the very nature of things, can, at best, represent nothing more than the accumulated expressions of long periods of human thought and action.

In full recognition of this fact, the thinking, law-abiding citizen, realizes that judicial opinion is necessarily and unavoidably, not infrequently, capable of a variety of constructions. Nevertheless, the great tendency of our present civilization is to bow down in reverential silence to the official acts of our judges, and, in the vast majority of instances, justly so, because these official acts represent the highest integrity of purpose.

I think I may venture the assertion, without fear of contradiction, that the profession of medicine is particularly conservative in its handling of public affairs—perhaps too frequently refraining from criticism of judicial expression concerning matters which are considered strictly within its sphere. Be this as it may, our profession should not lose sight of the fact that under our system of government the judiciary is the servant of the people, and not the people the servants of the judiciary. Judicial function is the proper construction of legal tradition, together with the equitable construction of those statutes which are made by the people in lawful assembly. These statutes should in themselves be the great voice of the commonwealth, and must be construed in the interests of law, order and public policy. It is one of the duties of the medical profession to safeguard the public health. It is its business to see to it that proper statutes are enacted, where medical matters are concerned, and it is also its function, when necessary, to enlighten the Courts with its special knowledge, in order that a just construction of these statutes may obtain. Its conservatism in this direction may be carried too far. Indeed, it has already been overreached. There is room for far greater concerted medical activity in matters of real practical importance to the community. The profession of medicine should not be blinded, in its pursuit of microscopic scientific investigation, to the necessity for careful consideration of some of the nearer things of everyday life.

When the medical profession of the great State of New York, the fountain-head of medical science in this country, is suddenly confronted with an opinion which is handed down from the Supreme Court, violating an elementary legal principle, and thereby shattering to its very foundation the usefulness of the physician's prescription as an order to the druggist, it is time that some concerted medical action should be taken in the premises.

When it is realized that this opinion distinctly holds

*First:* That there is plainly no negligence on the part of a druggist who tampers with the physician's prescription, even when this prescription calls for the dispensing of such dangerous and potent drugs as opium,

*Second:* That the substitution in the dispensing of a physician's prescription of one preparation for another is justifiable,

*Third:* That "morphine is not a cumulative poison," and that certain well-known poisonous doses of this drug *could not* be poisonous in their effects, thus flying directly in the face of accumulated scientific knowledge,

*Fourth:* That "no effects of one-tenth of a grain of morphine, or even a much larger dose, would remain in four hours after it was taken,"

*Fifth:* That a strictly ethical pharmaceutical preparation, the formula of which is published on each label, is a "patent" medicine,

*Sixth:* That a physician's prescription was negligently written, because in writing said prescription the physician did not name the ingredients he wanted *left out of the prescription*, as well as those he wanted the druggist to put in it,

*Seventh:* That the prescription was not carefully written, because the writer of it used the Latin word "cum" Heroin, instead of the English word "with" Heroin, so that in this manner, says the learned Court, "the prescription did not even follow the words of the 'patent medicine' it was to be filled from;"

And when we still further realize,

*First:* That at the trial of the cause the testimony of the druggist (who was actually guilty of substitution in the preparation of the prescription in question, and who also dispensed in said prescription a preparation containing 1-16 of a grain of acetate of morphine to each dose, whereas no acetate of morphine whatever was prescribed) was guiding to the learned Court as to a proper and safe quantity of morphine to be administered to the plaintiff,

*Second:* That this druggist further testified at the trial of the case, and the learned Court admitted his testimony in evidence and was guided by it in dismissing the complaint, that 1-16 of a grain of the acetate of morphine and 1-24 of a grain of Heroin added together equaled 1-10 of a grain of morphine, and also that this was a perfectly safe dose of morphine to give to the plaintiff, whom he had never seen, and concernig whose age, physical condition, or susceptibilities, he knew absolutely nothing.

*Third:* That this "chemist expert," whose testimony was guiding to the Court as to the proper and safe dose of morphine which should be administered to the plaintiff, swore that he was not a physician; that he had never received a medical education; that he did not know what was the matter with the plaintiff at the time he made the substitution in the prescription, and also that he had received his knowledge concerning the effects of morphine on the human system from the "National Dispensatory,"

*Fourth:* That this druggist further testified that ¼ of a grain of morphine given every hour "might put a patient under the influence of morphine," and also that ¼ of a grain of morphine administered every hour to a patient weakened in consequence of uterine hemorrhages, would have no more effect than if the person to whom these doses were administered was in perfect health, and furthermore, that ¼ grain doses of morphine would have "the same effect on every adult,"

*Fifth:* When we consider that the doses of morphine which this "chemist expert" informed the learned Court "might upset a patient" namely, ¼ of a grain every hour, would in all reasonable certainty, had such doses been administered to her, have killed the plaintiff in this action, and also that the administration of such doses, and even much smaller doses, has, over and over again, been followed by serious, and sometimes fatal results, particularly in persons where idiosyncratic tendencies have existed, but more especially in the cases of children and the aged and enfeebled with disease,

*Sixth:* That the testimony of the family physician, who swore positively that he found the plaintiff suffering from opium poisoning, describing to the Court her symptoms with considerable detail, was completely ignored by the learned Trial Justice, although this physician testified that he had been in the habit of regularly professionally attending the plaintiff for over twenty years, and by reason of such attendance he was in a position to know her peculiarities of constitution, together with her drug idiosyncrasies.

*Seventh:* And when to all this is added the fact that the learned Trial Justice, in rendering his opinion, resorted to judicial blackguardism for the sole purpose of supporting his foolish contention, it seems to me that it is the duty of the medical profession to speak on the subject in no uncertain voice. The play to the gallery should cease, and the competent critic should pierce the veneer of judicial farce with the keen searchlight of scientific truth. When well-settled and lawful medical principles, which have for their object the sole purpose of the protection of human life, become imperiled by farcical judicial opinion, "opera-bouffe" must give way to tragedy, and the play should take on a serious aspect.

I regret that a lack of time at this moment will not permit of a more complete and detailed exposure of the medical absurdities which are to be found in the text of the opinion as handed down by the learned Court. I will, however, make this detailed examination the subject of my next communication. Meanwhile, if I may be permitted a word concerning that part of the learned Court's phraseology which is devoted to myself, I desire to say that my personality, it seems to me, is entirely irrelevant to the issue.

Is it possible that the unsavory odor of defeat which was wafted down the river from Albany twenty years ago, in the case of "Cruikshank *vs.* Gordon," is still fresh in the memory of the then defendant's attorney?

This case (118 N. Y., 178) also interested the medical profession because of the principles involved, and there was at that time a very decided difference of opinion on the involved propositions of law between the learned Trial Justice, who was then at the bar, and the Court of Appeals.

"Unsavory" in the delicate nostrils of the learned Trial Justice as I may still be, the question here at issue remains the same. It cannot be deviated from in the slightest degree. No indulgence on the part of the learned Trial Justice in venom and personal abuse can by any possibility alter it.

Has the druggist the right to tamper with the physician's prescription, and has Mr. Justice Gaynor, in the case of "Laturen *vs.* The Bolton Drug Company" so held?

This question, together with the question of my professional reputation, I am perfectly willing should be left with the members of my profession with whom I have labored continuously and, I venture to hope, honorably, here in Brooklyn for twenty-five years.

With regard to the piteous and undignified spectacle which is presented to the community by the learned Court in its judicial use of irrelevant and abusive language in referring to a citizen and taxpayer, I have no opinion to offer, preferring to leave the question where it properly belongs, in the hands of Mr. Justice Gaynor's associates of the bench and bar. It may not, however, be considered unreasonable to add that such evidences of lack of judicial temperament can have no other effect on the mind of the average citizen than to cause him to give serious reflection to the question as to whether the source from which such undignified, irrelevant and venomous language emanates, is the judicial power to which grave matters appertaining to the public welfare should be submitted for impartial and rational adjudication. Very truly yours,

*June 6, 1905.* WILLIAM J. CRUIKSHANK.

# SOCIETY PROCEEDINGS.

## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, held February 16, 1905.*

The President, Charles A. Dana, M.D., in the Chair.

**Contributions to the Pathology of Sciatica.**—Dr. J. Ramsay Hunt reviewed the literature as to the pathological findings in cases of sciatica, and showed that there was a general consensus of observations with regard to a swelling of the nerves. Some English observers thought they observed uric acid in the neurilemma. It seems very probable, however, that these deposits were secondary. In most reported cases, the nerve was found redder and more voluminous, being usually less dense than normal. In one case the sheath was found to be loosened, with some dilated veins around the nerve, but no sclerosis of the nervous tissue. In one case it was thought that more fat was present in the nerve than normal. Out of the 11 cases reported, three were negative pathologically and the eight that were positive, showed an increase in size, though without much nerve change.

**Typical Attack.**—Dr. Hunt's patient suffered from left sciatica which disappeared after six weeks of treatment. It recurred again the next year. There were tender points, especially at the exit of the nerve, and there was some numbness on the outside of the limb, with coarse fibrillary twitchings. The patient died from intercurrent pneumonia and at the autopsy the left sciatic nerve was found thicker and more voluminous. This thickness was due to the deposit within the sheath of a firm jelly-like substance. No redness and no edema were noted. In this firm translucent substance no uric acid could be found. There was no evidence of round cell infiltration or of acute inflammation. There were no histological changes in the nerve itself and no fibrin and no degeneration. These autopsy findings seem to be somewhat in accord with those described as found in previous cases. Just what their significance is is not clear.

**Possibility of Syphilis.**—Dr. B. Sachs said that Dr. Hunt's case would seem to be entirely exceptional and not at all likely to prove a typical example of the ordinary pathological condition underlying sciatica. There is a possibility that the pain in this case may have been due to syphilis. Gelatinous deposits from syphilis have been found along the spinal cord, and indeed there is no other pathological condition in which jelly-like changes are known to occur. A specific perineuritis simulating ordinary sciatica is not as unusual as has been thought.

**Sciatica and Uric Acid.**—Dr. James J. Walsh said that it seems unfortunate that whenever there is discussion of a neuritis of any form, it is always considered necessary to haul in the mention of uric acid. The roll of uric acid has been entirely too much exaggerated and it seems unlikely that it ever causes any of the forms of neuritis which are spoken of as rheumatic. Indeed most of the neuritises are due to overwork of a particular group of muscles with consequent lowered resistive vitality of the nerves supplying them, so that they become more liable to attack from infectious agents. It is in an overworked nerve that such toxic substances as lead and alcohol are likely to produce their manifestations and still further add to the likelihood of an inflammatory neuritis resulting. Men who work outside with a pick and shovel, bending frequently at the hips, are especially likely to have their sciatic nerve affected if at the same time they drink freely of alcohol. In such cases there is no need to think of uric acid in the case and no justification in medical literature for the introduction of the term, which serves only to perpetuate an old-time fallacy, yet unfortunately is supposed to furnish indications for treatment.

**Less Sciatica.**—Dr. Robert Morris said that as the result of more intrapelvic work in both males and females in the removal of prostates and tumors of the pelvis, sciatic nerves are much less predisposed than formerly to become affected by inflammatory reactions of various kinds. As a consequence, fewer cases of sciatica now come to the surgeon for nerve stretching and other modes of relief. When nerve stretching was more common, it was found that adhesions between the sheath of the nerve itself and the nerve substance were not infrequent in sciatica cases and that relief of the pain was very marked after these adhesions were broken up. Unfortunately a recurrence of the symptoms took place not infrequently in a few months, because of the re-formation of the adhesions.

Dr. Hunt, in closing the discussion, said that syphilis seems to be excluded in the cases, since there was no inflammatory reaction and no round cells or epitheloid cells such as are always found in syphilitic processes. The case was typical clinically of sciatica as it is ordinarily seen and there seems no reason to think that it was an anomalous type that was encountered.

**Treatment of Acne.**—Dr. George T. Jackson said that there are three indications for the treatment of acne. The first is to improve the condition of the skin, the second is to remove the bacteria that may be present and the third is to keep the skin surface aseptic as far as possible. The first indication can be best met by forgetting for the moment that there is any disease of the skin and correcting all other diseases that may be present. This means that all hygienic precautions must be observed and care taken of all the functions of the body. For the removal of the bacteria Dr. Jackson has found the curette and the acne lancet of special importance. Where there are many lesions, they should be removed by direct curetting two or three times a week. All deep-seated lesions should be opened with the acne lancet. This little instrument is better than the ordinary lancet because it possesses a shoulder which prevents it from sinking too deeply and thus giving rise to scars. Where acne lesions have not come to a head, slight pressure upon them brings out a white point. It is into this that the lancet should be plunged.

**Local Drug Treatment.**—Dr. Jackson considers that lotions are better than ointments in the treatment of acne, because the skin is already more greasy than it should be in these cases. He has found that sulphur is the best remedy and the lotio alba gives excellent satisfaction. In cases where there is much tendency to seborrhea, a resorcin wash is employed until the skin is shiny and then zinc oxide used to lessen the irritation. Dr. Jackson has found that certain forms of sulphur soap can be employed with decided advantage. At first the simple washing is enough but later the lather may be left on for some time.

**The X-rays in Acne.**—Some physicians have employed the X-rays for the treatment of acne, but the condition scarcely seems serious enough to justify the employment of so powerful an agent. One result of the use of the X-rays in certain cases has been the development of abnormally dry skin evidently with the development of an atrophy of certain portions of the true skin. Whenever the X-rays are employed, it must be with great care and only to the production of a slight burn, if even to this extent.

**Colds and Grippe in 1904 and 1905.**—The discussion of this subject was opened by Dr. James J. Walsh, who said that while in certain parts of the country, notably in Chicago, there seems to have been a serious development of grippe, during the present season, this has not been so clear in New York City. Statistics of the incidents of grippe in New York are not easy to obtain. They may be assumed from the reported deaths from grippe, but as it is easy to understand, most cases of true influenza that terminate fatally do so because of some complication, and the death is reported under this complication rather than directly from grippe. In fact it is not clear that true influenza exists in anything like the amount that has been sometimes claimed. It is not easy to isolate the bacillus of influenza and in not a few cases of this disease that is supposed to occur, other micro-organisms are found, notably the *Micrococcus catarrhalis*.

**Prevalence of Grippe.**—Since the first great pandemic of influenza began at Bokhara, in Central Asia, about fifteen years ago, and gradually spread westward, it has been said that there were recurrences of the epidemic each year. It has been the rule to find that a severe almost universal epidemic always produced smaller epidemics for a number of succeeding years after the first. A consultation, however, of the statistics in the United States, will show, for most of the nineteenth century, at least this is true according to Hirsch, that grippe has been prevalent every year in some part of the country. It seems not unlikely that though it is supposed to be the old grippe epidemic holding over each year, the cases that occur are scarcely more than have been noted in years previous to the great epidemic.

**Pneumonia and Influenza.**—It has sometimes been said that the great increase in the death-rate from pneumonia in this country, especially in our cities, is due to the influence of the grippe in complicating such cases and preparing the soil for the pneumococcus. As a matter of fact, however, a careful analysis of the statistics for pneumonia, as made in the Section on Hygiene at the meeting of the American Medical Association last June, shows that the death-rate for pneumonia has only increased under five and over fifty-five. Some of this apparent increase then is due to the fact that the spread of a better knowledge of children's diseases, has led to the recognition of pneumonia in children which were formerly missed. Obscure causes of death such as convulsions are gradually disappearing, as the death-rate from pneumonia goes up. In the same way, the mortality from old age is decreasing while the mortality for pneumonia is increasing. Many people used to die of old age who now die of terminal pneumonia. It would be impossible to argue with regard to grippe from the pneumonia death-rate.

**Climatic Conditions in Grippe.**—It has often been said that infleunza is likely to be especially prevalent during the winter time, but when there is much damp weather rather than cold weather. As a consequence of this, it is thought that our severe winter of last year did not favor the existence of grippe while certain portions of the present winter have been more favorable. A consultation of the mortality from grippe in the two years here in New York City, however, will not bear out this idea, for the influenza death-rate last year was as great as this. Toward the end of the winter, owing to the fact that resistive vitality had been lowered by the severe cold, a great many cases of respiratory diseases were reported and there was an increase in the death-rate from influenza, as there is from all kindred diseases.

**Influenza Groups.**—Dr. Walsh said that in the epidemic of grippe in recent years, cases of similar character of the disease have occurred in groups associated with one another. For instance, it is the rule to find that where several members of a family come down with grippe, they suffer from the same type of the disease, *i.e.*, if in the first case the symptoms are mainly respiratory, subsequent cases are likely to have their affection confined to the thorax. On the other hand, if digestive symptoms are marked in the first case, subsequent cases in the same group are likely to show the same character. It would seem as though different types of bacilli were at work, and that probably there are a series of diseases all grouped together under the generic name, grip or influenza, which need to be studied much more carefully than at present in order to realize their indication.

**Pains in the Bones.**—At the present time the main symptom on which the diagnosis of grippe is founded is the occurrence of pains in the bones. It is probable that this symptom is due to the fact that there is an infectious agent in the blood destroying red blood corpuscles, and so making a special call upon the blood-making organs in the red marrow of the bone. It is not unlikely even that the bacilli themselves are directly irritative to the blood-making organs. It is in the flat bones of the pelvis and the skull, the characteristic headache and backache, and in the ends of the long bones, that the painful conditions are noted. Needless to say, this does not necessarily mean that the influenza bacillus is at work. Any infectious agent that will set up an irritative condition of the bone marrow will cause the pain complained of, hence the necessity for not considering that this symptom is at all pathognomic. With regard to the depression afterward the same may well be true, and there may be several forms of disease due to different micro-organisms at work.

**Prevalence of Influenza Bacilli.**—Dr. William H. Parks, in opening the discussion, said that influenza bacilli are present in a great many cases of catarrhal affections in our climate. During the winter season particularly is this true. More of them are found in January and February than in other months. The occurrence of the disease seems to be due to an increase of virulence, or a lowering of the resistive vitality of the patient, for the bacilli may be found even in those not suffering primary symptoms. Occasionally, perhaps, an association of different bacilli makes inoculation more easy. It is impossible to decide, however, whether there may not be a number of other bacteria grouped as influenza bacilli, because of morphological characteristics, yet without possessing true virulence. It is not impossible that once the disease has begun and passed through several persons the bacilli gain in virulence, and so become capable of affecting hitherto immune individuals.

**Bacteria of Respiratory Affections.**—Dr. T. W. Hastings said that in a large number of cases diagnosed as grippe he had found the *Micrococcus catarrhalis* to be the active agent. In not a few cases Friedländer's bacillus was also found. Some of the bacilli that seemed to be influenza bacilli proved later to be anomalous form of the *Bacillus pyocyaneus*. The most important bacillus in the winter time seems to be the *Micrococcus catarrhalis*, which in certain ways resemble the gonnococcus or Weichselbaum's bacillus of epidemic cerebrospinal meningitis. This micrococcus, described also by Pfeiffer.

has been found producing conjunctivitis, vaginitis, bronchopneumonia, and certain cases of croup that were not diphtheritic. It occurs very commonly in the nose, and can only be recognized by careful culture methods.

**Influenza Bacillus in the Eye.**—Dr. Arnold Knapp said that in certain cases of conjunctivitis he had found the influenza bacillus in pure culture. In one case, in an infant, it produced a very severe form of membranous conjunctivitis, with perforation of the cornea. In this case it was not unlike the pneumococcus, or the diphtheria bacillus. A Vienna observer found that a form of trachoma was due to the influenza bacillus. In order to obtain the true influenza bacillus for purposes of comparison, Dr. Knapp had to examine many cases of reported influenza in the hospitals. In only eight out of 120 supposed cases could the influenza bacillus be found. Cultures of it grow well only where there is a certain amount of hemoglobin, which would seem to confirm Dr. Walsh's suggestion of the possibility of the bacillus having a special affinity for the blood-making organs, and hence producing the characteristic pains in the bones. This bacillis is found in otitis cases, as a rule, only where blebs containing bloody serum are present. The sequelæ of influenza affections of the eye are often very serious. Inflammation of the optic nerve may occur in the form of retrobulbar neuritis, producing central scotomata. At times distinct lines may be seen around the maculă. Needless to say the prognosis of these cases is very grave.

**Low Fever.**—Dr. Warren Coleman said that the cases of grippe that have been under his observation this year have run their course with low fever not infrequently. In one recent case the temperature did not rise above 101° F., yet the fever was not broken for three weeks, in spite of treatment. The depression in these cases is beyond all expectation. In some of these low grade cases there are distinct disturbances of the cardiac rhythm. A very rapid heart is uncommon, and may last for some time into convalescence. Some of the cases have begun with distinct eruptions, at first erythematous, and then more urticarial in character, with prominent wheals. In these cases there is a distinct tendency to vasomotor instability.

**Careless Diagnosis.**—Dr. L. A. Connor said that most of the cases called influenza are undoubtedly ordinary catarrhal colds, which it has become the fad to speak of as grippy. In a number of cases in which microscopical examinations were made for the bacillus, the only case in which it was found was one where its presence had not been suspected. It would be a blessing if the term "grippe" were abandoned. It is applied now to every form of affection that occurs as the result of cold weather, from cold in one nostril to terminal pulmonary tuberculosis. Grippe is a soothing diagnosis to make. It prepares the family for the worst at once. Any number of complications may occur, and the doctor can scarcely be held responsible. It would be much better if the affections seen were called by proper descriptive names, laryngitis, pharyngitis, and bronchitis.

**Nervous Sequelæ.**—Dr. B. Sachs said that undoubtedly there has been some specially virulent infectious agent at work during the past fifteen years, the severe sequelæ of whose actions have been observed in the nervous system. These were much more severe twelve to fifteen years ago, when encephalitis and basilar meningitis were not infrequent. In more recent time there has been a lower grade of infection, and the peripheral nerves have suffered more. This problem of peripheral neuritis, due to influenza, sometimes makes a very serious diagnostic condition. A facial palsy, for instance, due to influenza may occur, and brachial neuritis is not uncommon.

**Otologic Complications.**—Dr. E. B. Dench said that influenza during the present winter has shown a distinct tendency to invade the ear more frequently than usual. The invasion is often sudden, accompanied by pain in the ear and some redness and bulging of the drum may be seen. In such cases an early myringotomy is necessary. Not infrequently mastoid tenderness is discovered early, and requires that the patient be carefully watched. The appearance of such tenderness must not be the signal for operating at once, since free drainage of the tympanic cavity may relieve the symptoms. Frequent irrigation with warm antiseptic solution seems to be the best treatment. Dr. Dench has found no special good in the use of the ice-bag nor the cold coil, and, indeed, these only mask the symptoms. As a rule the symptoms abate within twenty-four hours after the incision of the drum membrane. In cases where spontaneous rupture of the drum has taken place, three incisions may have to be made in order to secure good drainage. Whenever there is pus in the mastoid it must be operated upon early.

**Grippe as a Substitute for Malaria.**—Dr. Winters said that the term "grippe" is a godsend now that the public have grown tired of the term malaria. The diagnosis of grippe is made lightly, and covers a heap of indolence. Nothing is more difficult than to make a correct diagnosis of grippe. There is no single clinical symptom by which the disease can be recognized. The most important diagnostic method is the careful exclusion of other affections. This winter the disease has been unusually mild, and the tendency has been to exaggerate the significance of the affection. Dr. Winters has seen apparently grave symptoms of otitis with mastoid tenderness, yet all but one of the cases got relief and remained well without operation. In one case six physicians were present and ready for operation—one of them the uncle of the child—yet it was decided not to operate, and the child recovered. As much as possible children must be saved from the shock of operation. Children should be wrapped well in blankets, so as to induce a free perspiration, and given a little niter, and perhaps a little aconite. Phenacetin should never be administered to children.

**Special Grippe Symptoms.**—Dr. George Mannheimer called attention to the fact that certain symptoms have been picked out as characteristic of grippe. Of these a redness of the anterior pillars of the fauces is not uncommon. The strawberry tongue persists in influenza longer than in other febrile affections. Not infrequently there is an enlargement of the spleen. The most characteristic group of symptoms, however, is the combination of respirative and digestive disturbances, with sweating. The sequelæ of the disease are many, and certain forms of muscular rheumatism are especially likely to occur in connection with grippe, and then to recur afterward.

Dr. Bell said that many forms of affections of the upper respiratory tract are likely to be called grippe when really definite affections of known nature are present, but unrecognized for the moment. Follicular tonsillitis and pharyngitis are taken for grippe.

## NEW YORK ACADEMY OF MEDICINE.

### SECTION ON SURGERY.

*Stated Meeting, held February 3, 1905.*

The President, Samuel Lloyd, M.D., in the Chair.

**Chronic Osteomyelitis.**—Dr. C. A. Elsberg presented a male patient, forty-one years of age, in whom there had occurred a chronic osteomyelitis in the upper portion of the shaft of the femur. He had been operated upon at least once in one of the other hospitals of the city. The condition was a very obstinate one and recourse was had to iodoform wax filling. A thoroughly healed scar appeared at the site of operation beneath which could be felt a resisting mass; the remains of the unabsorbed iodiform filling.

Dr. A. S. Taylor exhibited two cases in which facio-hypoglossal anastomosis had been done. He said that in the earlier part of this work he had experienced a great deal of difficulty in avoiding extensive traumatisms of the twelfth nerve. This was easily demonstrated to be of great extent by the character of the paralysis of the tongue immediately after operation. He said that, however, with the new instruments, which he had devised for the purpose, this injury to the twelfth could be made a negligible quantity and that there was no indication therefore for cutting this important nerve.

**Three Stages in the Repair of the Seventh.**—Dr. Taylor said that three stages could always be made out very clearly as the cases began to improve. The first evidence of improvement was to be noticed in the face when it was at repose, the expression during quiescence appearing nearly normal. The second stage of improvement was marked by an ability to retract the angle of the mouth on the injured side, and the third was characterized by a return of what might be called emotional symmetry. He showed a boy, about eight years of age, on whom he had operated fifteen months before. The results were very good indeed, but not by any means perfect. The closure of the eye on the affected side was complete except at the inner canthus.

Dr. Taylor exhibited another case, that of a young woman in which he had, by the aid of the new instruments, been able to entirely avoid injury to the twelfth. Although the operation was done but two weeks ago, there was no paralysis of the tongue, and as in the case of the boy, the scar was small and unobtrusive.

Dr. H. B. Moseley showed a case of cured traumatic keloid of the face. This keloid as in the case of all his other subjects, had been operated upon repeatedly and the region had been skin grafted by competent operators. It had yielded to twelve months continued and severe treatment by the X-ray. The results were admirable.

Dr. H. P. Moseley showed a keloid of the anterior chest wall which had also been subjected to repeated removals and skin grafting. It had been cured after repeated exposure to the rays.

Dr. H. P. Moseley showed a cured keloid occurring in the neck. The lesion had been the result of an operation for a boil. It had been cut out three times and had eventually yielded to 90 exposures of the X-ray.

Dr. L. P. Clark opened the discussion of Dr. Taylor's paper. He said that the objection which had been made to lateral implantation of the seventh nerve into the twelfth, had been shown experimentally to be purely theoretical. These objections had been based upon the belief that too much work, by this anastomosis, would be put upon the nucleus of the twelfth. This nucleus had, however, been shown to be quite capable of doing the work of both nerves, and it was not surprising that it should be, for it was the largest nucleus in that region of the brain.

**Value of the New Instrument.**—The twelfth, therefore, if operated upon by the delicate and satisfactory instruments devised by Dr. Taylor, need not be injured to any extent, and the amount of vigor which was taken from it by the additional work cast upon its nucleus, was a negligible quantity. The seventh nerve furthermore, was not a true muscle of mastication and could readily be understood not to require the same amount of vigorous nerve impulse as was needed to drive such nerves, for example, as the second and third divisions of the fifth.

Dr. Howard Lilienthal said that he had understood, until hearing Dr. Taylor's report, that the eleventh nerve was to be preferred to the twelfth for facial anastomosis. The last of Dr. Taylor's cases, however, showed such successful preservation of the hypoglossal as demonstrated to him that with the use of the new instruments, this nerve was probably to be preferred to the spinal accessory.

Dr. A. S. Taylor said that the criticisms upon the use of the twelfth became very pertinent if use were made of it low down in the neck, as he understood to be the case in Fraser's operation. In that event the nerve has become so attenuated that it must be cut in order to complete the anastomosis; higher up in the neck, however, close to the petrous portion of the temporal bone, the nerve trunk is of substantial thickness and the anastomosis can be done without apparent injury.

**Disadvantages of Eleventh.**—One disadvantage of using the eleventh, which he said was not only theoretical, but, in some cases at least, real, was the convulsion of the patient by associated movements in the shoulder. These are very hard to dissociate and even after months are apt, especially under emotional conditions, to be manifest to a very disagreeable extent. Another reason for using the twelfth rather than the eleventh, the speaker considered to lie in the fact that the centers of the seventh and twelfth are nearer together than the seventh and the eleventh. This seems practically to result in a saving of time for the patient, because after all anastomotic operations education has to be begun as from infancy up.

**Education of the Centers.**—The cortical centers must be taught to operate new sets of muscles. A further reason for using the twelfth instead of the eleventh lay in the fact that if correlated movements did occur, which, indeed, had been noted, the terminations of the two nerves were closely associated with each other and one of them, the twelfth, supplied an organ which was in great part hidden within the mouth. Therefore they could not possibly be so noticeable as correlated movements occurring between areas widely separated as in the case of the termination of the seventh and the eleventh nerves.

Dr. Erdmann cited a case upon which he had operated about a year ago. He utilized the eleventh instead of the twelfth. Although there was for a time after operation a certain amount of motion of the shoulder co-ordinated with that of the face, this had passed away in relatively short time and the result he believed to be somewhat better than in the patient shown by Dr. Taylor.

**Treatment of Chronic Osteomyelitis and Chronic Bone Cavities, by the Iodoform Wax Filling.**—Dr. Charles A. Elsberg said that the need of obliterating cavities occurring after ordinary abscesses in the soft tissues was, owing to the character of the yielding walls

of such cavities, a relatively rare occurrence. Not so, however, with bone cavities. Months of treatment and innumerable dressings become necessary for the treatment of cavities of the hard parts. A vast number of technics, many of them very ingenious, have been tried, —the skin flap inversion method and Schede's healing under moist blood clot being among the number. Recently, from Vienna, had come the suggestion of the iodoform wax treatment. The method there employed was to thoroughly cleanse the cavity and swab it out with two per cent. formaldehyde. The percentage of iodoform in mixtures used at Vienna averaged about 60 per cent., the spermacetti and the oils being arranged in such quantity that the mass, when poured in, would take from two to three minutes to harden. As in the case of paraffin injections elsewhere in the body, this mass can be shown to be slowly absorbed as the tissue grows in, and the observations of it under the X-rays greatly facilitate it by the presence of iodoform which throws a most excellent shadow. The all-important point in the technic is that every particle of decayed bone must be removed and the part must be made as dry as possible. Having found that a simple pouring of the melted mass into the cavity does not suffice to fill all its interstices, the author recently resorted to the plan of pouring the wax into cold water for a moment and then pushing it by hand or by an instrument, much as a dentist would fill a tooth, into the ramifications of the bone tissue. He has modified the technic further in that he uses but 20 per cent. of iodoform instead of 60 per cent. He has also utilized paraffin instead of wax and oil. The results have not been as good as those reported from Moorhof's clinic at Vienna, but sufficiently encouraging to warrant further experimentation with the technic. Even if it fails to give the needed union, the operation is certain to stimulate granulations, to cleanse the part and to relieve the pain of numerous dressings.

Dr. Virgil P. Gibney, in opening the discussion of this paper, said that he had never used wax, but had often employed powdered iodoform. He had two successful cases and several failures, which, after hearing Dr. Elsberg's paper, he was convinced were due to a failure to thoroughly cleanse the parts.

Dr. Howard Lilienthal said that the author was not sufficiently enthusiastic about the results which had been obtained in the 15 cases reported. In the speaker's opinion, they had been more than good. The cessation of discharge in itself, he said, was almost enough to warrant the operation, which was free from danger. He considered the technic a great advance over the older method of packing, but neither so simple nor so sure as the filling of a tooth.

Dr. A. V. Moschcowitz said that a four per cent. solution of agar, if mixed with iodoform, might be used advantageously to fill the cavities, because such a combination would penetrate further into the interstices of the bone; complete hemostasis in this case being unnecessary.

Dr. Elsberg, in closing the discussion, said that agar had been tried. He felt very certain that the wax was better and that it should be shoved in, adranalin having been used before-hand to control oozing.

**Treatment of Keloid by the X-ray.**—Dr. Henry P. Moseley said that the treatment of keloid by incision had been shown to be almost universally a failure. While the X-ray, he said, was not without numerous objections, he considered that a study of the cases presented demonstrated that it was the most potent agent for the treatment of this obstinate and fortunately very rare condition. He said that so far there had been no recurrence in the cases which had been treated at the Presbyterian Hospital. He had concluded that in order to get results, the part must be severely burnt.

Dr. A. L. Fisk, in opening the discussion, said that very few cases had been reported. The literature recording but twelve, all of these having occurred in post-operative keloid. Such keloids, it is true, tend to disappear spontaneously, but undoubtedly the X-ray hastens the process.

Dr. C. W. Allen said that a distinction should be made between true and surgical keloids. He had found the X-rays useful in the disfiguring keloid of facial syphilis. He disagreed with the reader of the paper in contending that a dermatitis need not always be produced in order to make the keloid disappear.

Dr. Robert P. Morris reported two cases, both of which had been subjected to operation by eminent surgeons, with a failure in each case, until recourse was had to the X-ray.

Dr. Moseley, in closing, said that he was certain that in order to get results, a burn must be made. Furthermore, his best results have come from the use of a low vacuum tube. This should be used for all superficial troubles.

**The Present Status of Blood Examination in Surgical Diagnosis.**—Dr. F. E. Sondern said that great changes had taken place in the relation of blood examination to surgical diagnosis in the past twelve years. He reviewed the extensive literature of the subject up to the present time and then called attention to the fact that almost all the older observations were based upon the extent and rate of development of the leucocytosis. This misconception had given an opportunity to a great many men prominent as clinicians, to cast odium upon the value of the blood count as a diagnostic surgical sign. These adverse opinions were based chiefly on two points, viz., the absence of the leucocytosis in some cases in which pus was present, and the presence of pus in a reasonably large number of cases having a low leucocyte count. As a result of a great number of blood examinations made in surgical diseases, the author had been impressed by the fact that the differential count offered a far better guide to the status of an inflammatory process, and one which was not influenced to any extensive degree by bodily resistance, than the simple degree of leucocytosis. A study of about 5,000 blood specimens had yielded an average percentage of 62 for the polymorphonuclear. While it is true that the percentage of these cells varies somewhat in health as well as in the different stages of bodily resistance, these variations the author held to be within narrow limits.

**Three Distinct Blood Pictures.**—The author finds three distinct pictures in inflammatory lesion. First, a relative percentage of polynuclear cells below 70 with an inflammatory leucocytosis of any degree excludes the presence of gangrene or pus, and usually indicates good resistance. Second, an increased relative percentage of polynuclear cells with little or no leucocytosis is still an absolute indication of the inflammatory process and the percentage is a direct guide to the severity of the infection. The author has never observed a case of pus or gangrene with a polynuclear percentage below 70. In adults these conditions are decidedly uncommon with less than 80 per cent., and the probability of their presence increases with the percentage. Ninety per cent. of polynuclear cells indicate profound cachexia, while the prognosis for recovery is extremely bad in all cases over 94 per cent. Third, an increased relative percentage of polynuclear cells with a decided inflammatory leucocytosis.

**Relation of Leucocytosis to Resistance.**—The old maxim was, "Good resistance, marked leucocytosis; poor resistance, little or none." A. M. Holmes (*Jour. A. M. A.*, January 26, 1905) judges bodily resistance by small lymphocyte count. The author, however, believes the percentage of polynuclear cells is the best indicator of this condition.

**Iodophilia a Guide to the Inflammatory Process.**—Locke has obtained interesting results from this method. In the author's hands it has not seemed as reliable as the polynuclear percentage.

Dr. Edward Quintard, in opening the discussion, said that procrastinating medicine had undoubtedly killed more people than rash surgery. Despite this fact he considered that the employment of such a valuable diagnostic adjunct as had been described could but prove useful to the surgeon. He said that in his work upon the stomach, he had found that the polymorphonuclear differential count had proved valueless as a diagnostic aid in carcinoma.

Dr. Francis C. Wood agreed very cordially with the reader of the paper as to the value of the differential polynuclear count. He cited the case of a hospital interne whose life had been undoubtedly saved by its employment, a gangrenous appendix having been recognized through the agency of the differential, when, clinically it gave almost no symptoms whatsoever. Dr. Sondern, in closing, said that the blood picture was of no value whatsoever in establishing the diagnosis in carcinoma of the stomach.

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## CHICAGO SURGICAL SOCIETY.

*Regular Meeting, held March 6, 1905.*

The President, L. L. McArthur, M.D., in the Chair.

**Dermoid Cyst of Lung.**—Dr. Nicholas Senn reported a case of dermoid cyst of the lung, saying that thus far there are only sixteen cases on record. This is an unusual and very rare surgical affection. The patient, C. R., a male, aged twenty-three years, American, unmarried, a railroad man by occupation, entered the out-patient department of the University Hospital, Michigan, July 19, 1904. The case was very carefully studied there, and a history of it very accurately reported by the attendants at the clinic, and particularly by Dr. Roger S. Morris, to whom Dr. Senn was indebted for a complete history of the case. When the patient entered the Presbyterian Hospital, Chicago, the speaker had no idea that the case had been so thoroughly studied. The history of the case as related by Dr. Morris, is as follows: "The patient entered the University Hospital, July 19, 1904, when I first saw him with Dr. Ellis. From certain points in the history, which will appear presently, together with the result of the physical examination, I diagnosed the condition as probable dermoid cyst of the thorax, though unaware at the time of similar cases. The patient, a resident of a neighboring town, was unable to remain at this time, but was advised to return. This he did. On July 27, 1904, he was admitted to the medical ward, and the following history was obtained: On admission the patient complained of cough, expectoration of large quantities of foul-smelling sputum, and hemorrhages from the lungs. *Family History.*—Father is living and well. Mother has had "stomach trouble" nearly all her life, but is in good health at present. The patient has two brothers and three sisters who are alive and well. An aunt on the father's side died of "hemorrhage of the lungs and dropsy;" nothing more definite is known of her case. Otherwise the family history is negative. *Personal History.*—As a child, the patient was very well. He had measles, chickenpox, and a mild attack of diphtheria or tonsillitis. In all instances recovery was uneventful. At the age of twelve the patient had a diarrhea which persisted for about a year. Since then the patient has enjoyed good health until the onset of the present trouble. *History of the Present Disease.*—About nine years ago (eight years, according to out-patient history), that is, about the time of puberty, the patient had a severe attack of pneumonia on the left side, followed by a feeling of tightness across the chest and pain on breathing. The latter was localized to an area about the size of a hand in the precordial region. Prior to the attack of pneumonia the patient says he was struck over the heart by a drunken man, and ascribes the pneumonia which soon followed to the blow which he received. Between the time he was struck and the development of the pneumonia, he had severe neuralgic pains in the region of the heart and in the left shoulder. A year later the patient had another attack of pneumonia, which lasted about eight weeks. During a coughing fit, a large quantity of "pus" was coughed up at one time (over one quart). The "abscess" or "empyema" discharged three times in the next three or four days. The patient describes the so-called pus as a "yellow, semi-fluid material." After raising this material, the patient became much better, but has coughed and expectorated a good deal ever since. Four years ago the patient had a very severe hemorrhage from the lungs, and since then he has had one about every six months. The last one occurred just before the patient returned to the hospital. At times the hemorrhages amount to about one pint. During the last three years the patient has noticed a "rotten" odor to the sputum. In March, 1904, he went to Colorado for his health. He was examined by a physician, and told that he had empyema. Operation was advised. This the patient did not submit to. No tubercle bacilli were found in his sputum at this time. For some time the patient has coughed up hairs in his sputum; these are from one to six inches long. Since last March there has been some soreness over the right side of the chest. Expectoration is much more profuse when the patient is lying down. He has not lost weight.

*Status Præsens, July 29, 1904.*—Temperature has been normal since admission, respirations 20, pulse 72, regular, of fair size and tension. No palpable thickening of the arteries. Patient looks very well nourished. Active dorsal position. Mind clear. Build rather short and stocky; strong frame; panniculus fair. Muscles well developed and rather soft. The skin is of good color, smooth, dry, and elastic. No edema of ankles. There are no stiff joints. Lymph glands about left clavicle and behind left sternocleidomastoid are slightly enlarged; otherwise negative. Expression is negative. Pupils are equal, react well; sclerotics are clear, slightly bluish. Conjunctivæ and lips are of good color. Teeth are in fairly good repair. The tongue is large, clean and moist. Examination of neck negative. Thorax is well formed, rather large. The left side seems slightly fuller than the right. The epigastric angle is about a right angle. Expansion is rather small, slightly less on the left side, especially on deep breathing. The difference is more noticeable in the lower part of the thorax. The clavicles are equally prominent. On percussion the apices are of equal height, about one and one-eighth inch above the clavicles. Above the second rib the percussion note is the same on the two sides. Below this level the note is somewhat hyperresonant on the right, with relative dulness throughout the left

front, the upper border of the relatively dull area sloping downward and backward into the left axilla. Traube's space is clear. There is no absolute liver dulness. The lung liver border is on the sixth rib in the right nipple line; it extends straight around. The lung deseends to the seventh rib on deep inspiration. Auscultation above the right clavicle gives rather harsh vesicular breathing, with fairly high-pitched sibilant râles on inspiration; below the clavicle throughout the right side there is moderately strong vesicular with no adventitious sounds. Above the left clavicle the breath sounds are obscured by sonorous rhonchi, which are heard both on inspiration and on expiration. Below the left clavicle there is harsh vesicular accompanied by dry râles of medium pitch, the vibrations of which can be felt on palpation. Below a line drawn from the anterior axillary fold to the left nipple the vesicular is very weak, and toward the end of inspiration a few crepitant râles are heard. The ausculted spoken voice is slightly weakened between the second and fourth ribs on the left; vocal fremitus unaltered here. Posteriorly, the apices are of equal height on percussion. Below the level of the spine of the eighth dorsal vertebra there is relative dulness on the left side; this is continuous with that previously described in the axilla. In other respects percussion of the back is negative. The upper border of relative dulness does not move with change in position of the patient. Auscultation reveals fair vesicular throughout the right back and on the left back down to the dull area, where the vesicular is weak and distant. Pectoral fremitus is slightly weaker on the left side over the same area. Auscultation of the spoken voice is negative behind. The apex of the heart is best felt in the fourth intercostal space in the nipple line. At the beginning of the examination a pulsation was seen on the second and third interspaces, which was forcible enough to be palpated. Absolute heart dulness begins on the fourth rib and extends outward to the apex; on the right it extends to the left sternal line. The relative heart dulness cannot be separated from that obtained over the left lung. The heart sounds are moderately strong and clear. The second pulmonic is reduplicated and accentuated. Abdomen is on a level with the ribs. It looks natural. The walls are quite resistant, making palpation difficult. Spleen and liver are not felt. Percussion is negative. Leucocyte count, 9,256 on July 27, 1904. Urine examination was negative. Sputum was examined July 31, 1904. The color was whitish-gray. Sputum had a foul odor, like that of "bad" eggs. It separated into three layers. No tubercle bacilli were found; no elastic tissue. Later a hair was found in the sputum. Fluoroscopic examination shows a slight shadow throughout the left side above. Below the level of the eighth dorsal spine and extending to about the level of the eleventh dorsal there is a diffuse dark shadow, as dark as that from the liver. The entire right side is clear. A skiagraph was taken; unfortunately the negative was poor."

**Clinical History.**—Dr. Senn stated that this clinical history was very full and accurate, and corresponded exactly with what he had found on careful examination of the patient repeatedly after his entrance to the Presbyterian Hospital. The patient coughed up during his residence in the hospital for a number of weeks, six or eight hairs. These hairs were very thin, lighter in color than the hair of the scalp, and varied in length from one to six inches. Sometimes, when patient expectorated these hairs, he felt a certain sensation which he referred to the base of the heart. Expectoration, at times, had been very copious and fetid. The patient's general condition was excellent. There was no wasting, no cachexia, hence any suspicion of tuberculosis could be abandoned without giving the chest a careful examination. He had made use of the X-ray in this case, and the skiagraph exhibited corresponded to what Dr. Morris had described in the clinical history. From the clinical history, the character of the sputum, the general condition of the patient, there was no difficulty in making an absolute diagnosis of dermoid cyst communicating with the lung. He resorted to a surgical operation for the purpose of exposing, if possible, and removing the lining membrane of the dermoid cyst. Clinical records showed at the present time almost invariably that these cysts had their location in the anterior mediastinum at a point corresponding with the location of the thymus gland. This was their favorite primary location. He therefore aimed in operating upon this patient to expose that portion of the mediastinum which is most frequently the seat of dermoids of the lung. He made a T-shaped incision, which remained well-defined by the scar which followed as soon as the wounds had healed, largely by primary intention. He made a transverse incision directly over the manubrium, and a vertical incision over the center of the sternum. As he wanted to trephine the manubrium at a point corresponding with the location of the thymus gland, he made another or second opening two inches lower down, after reflecting the cutaneous flap and periosteum, which were separated from the sternum, and united these trephined openings by the use of a chisel, thus making an opening more than two inches in length in its vertical diameter, exposing freely that part of the anterior mediastinum which was generally the seat of dermoid cysts. The moment he opened up the anterior mediastinum by cutting through the posterior layer of the periosteum, air entered forcibly. Hemorrhage was quite profuse. He enlarged the opening to correspond with the size of the trephine openings, and this exposed freely the anterior mediastinum. Owing to profuse hemorrhage, he packed the large wound with iodoform gauze, and allowed the gauze tampon to remain for five or six days, when it was removed, and when he anticipated, in all probability, he would find the remains of the dermoid cyst in the expected location. In this, however, he was disappointed. In removing the tampon he found that the entire part of the anterior medastinum which was exposed lined fairly well with granulations. He proceeded to explore the floor of the wound with the probe, but no trace of the dermoid cyst could be found. The operation had not influenced the clinical course of the disease. Before resorting to operative measures, and knowing nothing about the previous history of the case, for the purpose of locating, if possible, the dermoid cyst accurately, he resorted to exploratory punctures. He found, as did Dr. Morris, an area of dulness corresponding with the upper segment of the sternum and at the base of the heart. He explored about an inch and a half from the left margin of the sternum and a little above the base of the heart to the depth of three or four inches, resorting to aspiration, gradually withdrawing the needle, but the result was negative. He found likewise a limited area of dulness which corresponded with the intrascapular region, that is, between the spinal margin of the scapula and the transverse process of the spine. In this locality he punctured, but with a similar negative result. The patient coughed now about the same as he did before the operation, so that the question arose as to what was to be done in the future. He exhibited the patient with a view of asking the advice of the members of the Chicago Surgical Society as to

the course to be pursued in the future. He could do nothing more with the anterior mediastinum. The patient had a slight area of dulness extending over the base of the heart, with a similar area of dulness on the posterior surface of the lung. He thought he had to deal here with an exceptional case. In nearly all, if not all, cases of dermoid cyst of the lung it was found to take its origin in a location corresponding with the thymus gland. That part of the mediastinum had been thoroughly explored. Nothing was to be gained by repeating the operation in that locality. He took particular care to use a probe in all directions in search for a possible sinus communicating with the supposed original seat of the disease. The question arose now, should he resort to costal resection at a point to which the patient referred his difficulty, namely, above the base of the heart, or should be, in view of the fact that distinct physical evidence of pulmonary complications, or, at least, pleural thickening over the posterior aspect of the chest had been found, operate in that locality? He had kept the wound open for a number of weeks with a view to studying repeatedly the condition of the anterior mediastinum, which was exposed by the operation. The arch of the aorta could be seen in the lower part of the wound. The operation wound had now completely healed, yet the patient was in the same condition as he was before operation.

Dr. Senn passed around some of the hairs which the patient has expectorated at irregular intervals. One of the hairs measured six inches in length.

He also reported cases of (1) echinococcus cyst of the lung; exploratory puncture; rupture of cyst. (2) Dentigerous tumor of superior maxilla. (3) Ligation of internal and excision of external carotids for malignant disease. (4) Disarticulation at the hip-joint for sarcoma of femur and tubercular endovaginitis. (5) Extensive plastic of the face after operation for carcinoma of the orbit, nose and face. (6) Rectoplasty for extensive traumatic defect. (7) Scar carcinoma in the region of the great trochanter. (8) Fracture of humerus with posterior dislocation of upper fragment. (9) Secondary suture of ulnar nerve after gunshot injury.

**Surgical Treatment of Chronic Mucomembranous and Ulcerative Colitis; with Special Reference to Technic.**—Dr. J. E. Summers, of Omaha, Neb., read a paper on this subject, by invitation. The author first discussed chronic primary colitis; then primary membranous colitis and ulcerative colitis, and reported cases. After referring to the work of Keith, W. Hale White, Deaver, MacEwen, Cannon and Lane, the author stated that in order to cope successfully with the different kinds of colitis the surgeon must, in so far as possible, be able to differentiate the cases and apply the surgical procedure to fit the cause. This is rather new surgery, but has a field of usefulness. Any form of colitis which has resisted careful medical treatment must be studied with a view of determining the cause and the reasons for the persistence of the cause. For surgical convenience he recognizes three kinds of colitis: (1) The inflammatory, due to the effect of some specific organism—an inflammatory disease commencing in and mostly confined to, the colon. (2) An inflammatory condition secondary to an inflammation or derangement of function of the vermiform appendix. (3) An inflammation induced by technical interference with the peristaltic, and more especially the antiperistaltic waves of the colon. The surgical treatment of colitis, if carried out in recognition of these causes, will be successful. To be successful, the type of operation must be selected with a view to meeting the pathology. It will not do to confine oneself in all cases to a right inguinal colotomy. This may have done for the class of cases for which it was first selected, but even in this class, which the author designates the bacteriological, the artificial valvular fistula operation suggested by Gibson, of New York, has many advantages, not the least being the annoyance of a large open fistula, and the inevitable loss of weight and strength which always follows the free external discharge of chyme as it comes direct from the ileocecal orifice. In his experience with the appendicular forms of colitis, there are two varieties—first, and most common, the explosive form, which is recognized in the first few hours by intense general abdominal pain, with tenderness over the appendix. In from six to twenty-four hours dysenteric symptoms develop, which may last some days, and then gradually subside or persist with moderate symptoms for several weeks. These attacks recur. The other form is of the kind described by Deaver. In the first kind the removal of the appendix is all that is required, as has been so in three of the author's cases. In the neurasthenic type of Deaver not only should the appendix be removed, but the Gibson cecal fistula ought to be established—the long-continued interference with cecal and colonic digestion by the abnormally functionating appendix has brought about changes in the mucosa of the colon that can only be cured by the rest and local treatment afforded through this fistula. If these simple means will not bring about a cessation of the discharges, and the impaired health which always accompanies them, then something further must be done. The colon must, in greater or less part, be excluded from the process of intestinal digestion and the function established gradually by the small intestines and the remaining portion of the colon. Operations for exclusion have undergone a remarkable evolution.

**Drainage in Diffuse Septic Peritonitis.**—Dr. Van Buren Knott, of Sioux City, Iowa, read a paper, by invitation, on this subject, in which he drew the following conclusions: (1) Operations for diffuse septic peritonitis should be made as quickly and with as little manipulation as is compatible with thoroughness. (2) Evisceration, partial or complete, greatly increases shock and the prospects of a fatal result. (3) The general use of clean hot water will most thoroughly cleanse the infected cavity with the least traumatism. (4) Drainage is simplified by collecting the peritoneal fluid at one point where drains may be easily placed. The elevated head and trunk posture followed by the gravitation of fluid to the lower pelvis best accomplishes this. (5) Results following the surgical treatment of diffuse septic peritonitis will be improved should each individual operator adopt some definite form of procedure in such cases which, being well understood by operator and assistants, may be methodically, speedily and thoroughly carried out.

**Exclusion of Portions of the Intestine.**—Dr. M. L. Harris, in discussing these two papers, said his experience as to exclusion of portions of the intestine had always been limited to exclusion with drainage into the intestine. He has resorted to this method in several cases in which the cecum and ascending colon were involved, and always with success. He has always made use of the method of dividing the ileum and transplanting it into some portion of the colon distant to the trouble which he sought to relieve. The colon was always left free, so that it could drain. He believes this is an essential feature, and thinks that complete exclusion of any portion of the intestinal tract should never be undertaken.

**Exclusion of the Bowel.**—Dr. Jacob Frank said, with reference to exclusion of the bowel, in some of the cases reported before the society, it was demonstrated that in that part of the bowel which was excluded there were masses formed from the secretions or excretions from the mucous membrane. These masses consisted of small balls of cheesy substance, filling up the excluded bowel. He does not think it is safe to close up both ends, as he has demonstrated this in dogs. He has specimens at home of these cheesy masses which he intended to exhibit at a future meeting of the society. As to Dr. Knott's paper, he had tried the method mentioned by him, and in two cases of diffuse septic peritonitis he filled the abdomen with salt solution, put the patients in the Fowler position, and used glass drainage tubes, setting the patients up in bed with a backrest, and both recovered.

**Treatment of Septic Peritonitis.**—Dr. Daniel N. Eisendrath showed the photograph of an apparatus which has been in use in the Michael Reese Hospital for the past two or three years for the treatment of cases of diffuse septic peritonitis. This apparatus has advantages over using tables, chairs, etc., as one can more accurately get the Fowler position. It is an advantage over propping up of the patient in bed, for those who have had experience with such patients know that in their weakened condition they would slip down. About a year ago, when he began to use the Fowler position systematically and to flush cases of diffuse septic peritonitis thoroughly with hot salt solution, using three to four gallons in each case, he changed his mortality from 100 per cent. practically to a large per cent. of recoveries. He cited three cases of diffuse septic peritonitis that had recovered from this treatment.

Dr. Alexander Hugh Ferguson said that in a spreading inflammation of the peritoneum one should not forget where the focus of the inflammation was when he begins to drain. The Fowler position, which has been so much lauded and recommended, should not supplant every means of drainage of the abdominal cavity. He mentioned three positions from which pus emanated that should not be drained by the Fowler position.

Dr. Knott, in closing the discussion on his part, said, with reference to the remarks made by Dr. Frank, he believes in the long-run Dr. Frank would secure better results, afford more comfort to his patients, with less tendency to fecal fistula, by the use of soft rubber tubes than by the use of glass tubes.

Dr. Summers, in closing the discussion, said that his experience had been limited to eight operative cases. He did not know that Dr. Harris had been doing the operation of intestinal exclusion with drainage into the intestine. He was not aware of it, because Dr. Harris had not published his work. With reference to Dr. Knott's paper, he would say that Dr. Knott was so thoroughly convinced of the utility of the plan advocated in treating cases of diffuse peritonitis, that he operated upon his own son, eighteen hours after an operation for perforation appendicitis by another surgeon. Dr. Knott had himself operated in the absence of a colleague, making extra-median incision, and with toilet and drainage established, saved the boy's life.

## BOOK REVIEWS.

German-English Medical Dictionary. By Hugo Lang, B.R. Edited and completed by Bertram Abrahams, M.B., B.Sc., F.R.C.P. P. Blakiston's Son & Co., Philadelphia.

This substantial volume fills a long-felt want for the English-speaking members of the profession of medicine, and the author has handled the difficult question of the genders sensibly. As regards the mute letters, both spellings are given where the lack of the older form might occasion any uncertainty. The bulk of the book is commendably limited by the omission of words spelled identically in the two languages, and a large number of terms used in chemistry, biology and pathology are included. It is, furthermore, a good piece of book making, in remarkable readable type and strong and tasteful binding.

Text-Book of Insanity Based on Clinical Observations. By Dr. R. von Krafft-Ebing, late Professor of Psychiatry and Nervous Diseases in the University of Vienna. Authorized translation from the latest German edition by Charles Gilbert Chaddock, M.D., Professor of Diseases of the Nervous System in the Marion-Sims-Beaumont College of Medicine, Medical Department of St. Louis University, St. Louis, Mo., etc. F. A. Davis Company, Philadelphia.

Dr. Chaddock has excellently performed a much-needed service in giving to readers of English so careful and adequate a translation of Krafft-Ebing's great work, which has remained a leading German text-book on insanity, although the author's strong bent toward psychologic explanation has fallen somewhat into disfavor in these later days during the tremendous vogue of Kräpelin. The facts of morbid psychology have never found a better clinical exposition than in this volume, which resulted from the minute and continued study of cases by an indefatigable and patient observer. His labors belong chiefly, or at least characteristically, to that period when the subject was undergoing minute analysis, and hence we find him distinguishing nine or ten forms of epileptic insanity and as many of paranoia. He also dwells to some length on those cases in which two or more forms of insanity in the same patient may run simultaneous courses, each undisturbed by the other. In spite of the fact that psychiatry has undergone considerable change and development, mainly in the direction of synthesis, since the publication of the first edition of Krafft-Ebing's text-book, in 1879, it still remains unparalleled in its minute and exhaustive descriptions of mental states related to bodily disease, and as such is invaluable to the student, especially to such as have enjoyed but limited opportunities for clinical observation in person.

Atlas and Epitome of General Pathologic Histology. By Dr. H. Dürck, of Munich. Edited, with additions, by Ludwig Hektoen, M.D., Professor of Pathology, Rush Medical College, in affiliation with the University of Chicago. W. B. Saunders & Company, Philadelphia, New York and London.

In placing this volume before the medical profession, the author reflects the latest and most generally accepted views concerned in circulatory disturbances, retrogressive metamorphoses, reparative processes and tumors.

As an epitome the text is adequate and consistent. As an atlas it is singularly elaborate and instructive. The plates, which are accurately represented, artistically executed and beautifully reproduced, are placed throughout the subject-matter with studied care.

The book can be recommended as a valuable adjunct in acquiring a better understanding of pathologic histology.

## BOOKS RECEIVED.

On Becoming Blind. By Dr. E. Javal. Translated by Dr. Carroll E. Edson. 12mo, 191 pages. Illustrated. The Macmillan Co., New York.